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Contents

Case Report

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Acute Dystonia Due to Pregabalin Abuse in an Adolescent

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Abstract

Pregabalin is a drug used to treat neuropathic pain, epilepsy, and fibromyalgia. However, the number of reported cases of pregabalin abuse is steadily growing. This case showed dystonia, an adverse effect that has not been documented previously as a consequence of pregabalin administration. A 16-year-old male patient with no known pre-existing medical conditions has admitted to the paediatric emergency department for the first time, complaining of drowsiness caused by pregabalin abuse. During the patient's follow-up, acute dystonia was observed, and biperiden was administered in repeating doses. Subsequently, he was transferred to the pediatric intensive care unit (PICU) for further tests, closer follow-up monitoring, and treatment. After three days of follow-up, the patient was discharged due to the absence of complaints. This case report presents dystonia resulting from pregabalin abuse, a condition that has not previously been documented in the literature.

Keywords: Dystonia, Pregabalin abuse, Pregabalin

Introduction

Pregabalin is a gabapentinoid drug licensed by the FDA in 2004 to treat neuropathic pain and partial-onset seizures (1). Pregabalin usage has grown in recent years, usually in combination with other substances (2). High doses of pregabalin can elicit drowsiness, disorientation, and apathy, and the severity of these adverse effects have been shown to be dose-related (3). Upon review of the literature, there has been no recorded instance of pregabalin abuse result with dystonia as a serious adverse effect.

This study was conducted to document the onset of dystonia in an adolescent taking pregabalin for the first time and to outline the therapeutic interventions employed in response.

Case Report

A 16-year-old male patient has admitted to the paediatric emergency department with complaints of fatigue and headache. The patient's history revealed that he did not have a systemic disease or chronic drug usage. It was also discovered that he had consumed 750 mg of pregabalin for the first time three hours before admission, based on the recommendations of his friends. The initial physical examination findings of the patient were normal. During the follow-up in the paediatric emergency department, the patient exhibited dystonic movements in his arms. Biperiden (3 mg) was immediately administered intramuscularly, and the dystonic movements regressed after the first biperiden dose. A complete blood count, electrolyte, venous blood gas analysis, and blood glucose levels were performed. Additionally, a computerized brain tomography was performed to rule out intracranial haemorrhage and brain edema. The radiological and laboratory examinations revealed no pathology. Within the first hour of his hospitalization, the patient exhibited dystonic movements of the tongue. A second intramuscular dosage of 3 mg biperiden was administered. Subsequently, the patient's dystonic tongue movements subsided gradually. After the sixth hour of observation, dystonic movements in the patient's tongue recurred. A third 3 mg intravenous biperiden dose was given. Following the administration of the third biperiden dosage, the patient's dystonia diminished; however, bradycardia was observed. Sinus bradycardia was identified using electrocardiography. Troponin and creatine kinase MB (CKMB) testing were performed, and no pathology was detected. The patient's bradycardia regained in the 12th hour of his follow-up, and he was transferred to the paediatric intensive care unit (PICU). Electroencephalography, brain diffusion magnetic

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resonance images (Diffusion MRI) and conventional brain MRI exams were conducted, and no pathology was found in these examinations. Dystonic movements did not occur during the follow-up in PICU. The patient was consulted with Paediatric Psychiatry department on the third day of his PICU hospitalization. He had no active suicidal thoughts, his effect was euthymic, his connections were regular and purposeful, and his perception and memory orientation were normal. The laboratory data obtained on the third day revealed no pathology, and the patient was discharged because of the absence of complaints.

Discussion

Pregabalin is used to treat epilepsy, neuropathic pain, and fibromyalgia, and its recommended therapeutic dose ranges from 150 to 600 mg per day (4). Pregabalin abuse is uncommon, however studies reveal that a growing number of patients are self-administering higher-than-recommended doses to obtain euphoric peaks (5).

There are relatively few studies that solely describe pregabalin abuse in patients with no previous history of substance abuse. An analysis of 59 adult patients taking only pregabalin was published, and the mean pregabalin dose in these patients was reported to be between 750 and 2700 mg. One patient experienced severe coma seven hours after ingesting a high dose of pregabalin (2400 mg) and was subsequently hospitalized in the intensive care unit (6).

Two of the three adolescents who abused pregabalin in a case series presented by Alan et al. showed signs of sweating, irritability, sleep disorders, anorexia, shivering, and aggression, whereas the third patient showed no symptoms (7). In Jordanian research, the consequences of pregabalin withdrawal, such as headache, anxiety, depression, joint and muscular discomfort, tremor, numbness, and high dosage usage to extend pregabalin duration, were reported (8). The patient admitted to our hospital had taken an amount of pregabalin over the therapeutic dose for nonmedical purposes. The first finding was excessive sleepiness, which was consistent with the actual literature findings, but dystonia was observed in his follow-up, which has not been previously documented in the literature. The absence of pathology in our patient's laboratory and radiological exams and the normal mental assessment supported the relationship between the development of dystonic movements and pregabalin usage.

Acute dystonia is a hyperkinetic movement disorder caused by various factors, and pharmacological therapies such as anticholinergic, dopamine-depleting, and benzodiazepine group drugs can be used in treatment (9). One hypothesis that explains the pathophysiology of dystonia caused by pregabalin may be the GABA density involved in high-frequency myoclonus; in susceptible individuals, there is an assumed increase of GABAergic transmission in a specific area (10). However, the exact mechanisms of pregabalin induced dystonia remains poorly understood, yet. Biperiden can be used in the treatment of acute dystonia with its anticholinergic effect (11). In the presented case, dystonia persisted for an average of 13 hours, and three doses of biperiden were administered intermittently to subside its effect.

In conclusion, pregabalin use in various clinical indications have been increasing in recent years, however this brings along with a new clinical entity called "pregabalin abuse" so further research is needed to understand its adverse consequences and the treatment of these undesired effects. In this case report, we intended to draw attention to pregabalin abuse and highlight dystonia as a novel symptom.

References

1. Verma V, Singh N, Singh Jaggi A. Pregabalin in neuropathic pain: evidences and possible mechanisms. Curr Neuropharmacol. 2014 Jan;12(1):44-56.
2. Kuhn D, Müller TJ, Mutschler J. Pregabalinmissbrauch und -Abhängigkeit in verschiedenen europäischen Ländern im Hinblick auf deren Substitutionspolitik [Pregabalin abuse and dependence in various European countries: Association with substitution policies]. Fortschr Neurol Psychiatr. 2021 Nov;89(11):553-561.
3. Rietjens SJ, Sikma MA, Hunault CC, de Lange DW, Hondebrink L. Pregabalin poisoning: Evaluation of dose-toxicity relationship. Br J Clin Pharmacol. 2022 Mar;88(3):1288-1297).
4. Alles SRA, Cain SM, Snutch TP. Pregabalin as a Pain Therapeutic: Beyond Calcium Channels. Front Cell Neurosci. 2020 Apr 15;14:83.
5. Evoy KE, Morrison MD, Saklad SR. Abuse and Misuse of Pregabalin and Gabapentin. Drugs. 2017 Mar;77(4):403-426.
6. Isoardi, KZ, Polkinghorne, G, Harris, K, Isbister, GK. Pregabalin poisoning and rising recreational use: a retrospective observational series. *Br J Clin Pharmacol*. 2020; 86: 2435–2440.
7. Alan BE, Kızılkan MP, Akgül S. Pregabalin abuse in adolescence: a case series. Turk J Pediatr. 2022;64(2):357-363.
8. Al-Husseini A, Wazaify M, Van Hout MC. Pregabalin Misuse and Abuse in Jordan: a Qualitative Study of User Experiences. Int J Ment Health Addict. 2018;16(3):642-654.
9. Batla A. Dystonia: A review. Neurol India. 2018 Mar-Apr;66(Supplement):S48-S58
10. Richerson GB, Wu Y. Dynamic equilibrium of neurotransmitter transporters: Not just for reuptake anymore. *J Neurophysiol.* 2003;90:1363–74
11. Termsarasab, P., Thammongkolchai, T. & Frucht, S.J. Medical treatment of dystonia. *J Clin Mov Disord* **3**, 19 (2016)

Case Report

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Tubal Stump Ectopic Pregnancy with Acute Abdomen: A Rare Case Report

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Abstract

Ectopic pregnancy, characterized by the implantation of the gestational sac outside the uterine cavity, is a grave condition. The objective of this study is to report a case of recurrent ectopic pregnancy in the residual site of the same fallopian tube, which had undergone unilateral salpingectomy due to ectopic pregnancy five years prior. Despite its rarity in the literature, tubal stump ectopic pregnancy poses higher risks of maternal mortality and morbidity compared to other types of tubal ectopic pregnancies. It is important to note that a history of salpingectomy does not exclude the possibility of ipsilateral recurrent ectopic pregnancy. Furthermore, this is the first documented case of stump tubal ectopic pregnancy from Turkey.

Keywords: Ectopic pregnancy, tubal stump pregnancy, acute abdomen, vaginal bleeding

Introduction

Ectopic pregnancy occurs in 1-2% of all pregnancies and is a major contributor to maternal mortality during the first trimester (1). The ampullary region of the fallopian tube is the most frequent site of ectopic pregnancy occurrence. The condition presents with a diverse range of clinical manifestations, ranging from asymptomatic cases incidentally detected through laboratory tests to life-threatening situations accompanied by hemorrhagic shock (2, 3).

The incidence of ectopic pregnancy has risen in recent decades, primarily attributed to factors such as advanced maternal age, pelvic inflammatory disease, and the widespread use of assisted reproductive technology (4). Ipsilateral ectopic pregnancy in the tubal stump following total or partial salpingectomy is an exceptionally rare occurrence. Its atypical location can lead to diagnostic delays, while intra-abdominal bleeding poses a life-threatening risk to the patient (5). Therefore, it is crucial for clinicians to acknowledge that salpingectomy does not eliminate the possibility of tubal stump pregnancy, which represents another form of ectopic pregnancy (6). This article presents a case of spontaneous ectopic pregnancy in the residual fallopian tube after unilateral salpingectomy, which was originally performed due to an ectopic pregnancy.

Case Report

The patient, a 26-year-old woman with a history of gravida 3, para 0, and 1 spontaneous abortion, underwent laparoscopic right salpingectomy in another facility five years ago following a ruptured right tubal ectopic pregnancy. She had no known systemic diseases and did not utilize contraceptive methods. The patient's most recent menstruation occurred five weeks prior to admission when she presented to the emergency department at our tertiary hospital. Her chief complaints were syncope and abdominal pain, which began six hours ago and steadily intensified. During the initial evaluation of the patient, she presented with confusion in consciousness, pallor of the skin, a systolic blood pressure of 80 mmHg, a diastolic blood pressure of 55 mmHg, and a pulse rate of 110 beats per minute. Due to the patient's confused state, the presence of guarding and rebound tenderness in the abdominal examination was identified through the expression of pain on her face. An anamnesis obtained from the patient's husband revealed no history of systemic diseases or drug usage, with the pregnancy occurring spontaneously. Laboratory findings showed a hemoglobin level of 6.8 g/dL, a hematocrit level of 22.3%, a platelet count of 159x103/mL, normal coagulation and laboratory parameters, and a beta-human chorionic gonadotropin level of 4.872 mIU/mL. Transvaginal ultrasound imaging revealed an endometrial

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thickness of 16 mm. The observed findings were consistent with the presence of a gestational sac measuring 12x10 mm, which contained a yolk sac located laterally to the right uterine cornual region. While the left ovary was naturally visualized, a 38x27 mm corpus luteum image was observed in the right ovary. Significant fluid collection with multiple echogenicities was detected in the pelvic region. Based on the presence of hemorrhagic shock and suspicion of a ruptured ectopic pregnancy, an emergency laparotomy was warranted. During the initial phase of the operation, approximately 1000 cc of blood was aspirated from the abdomen for immediate exploration. It was observed that the bleeding originated from a 1 cm ectopic pregnancy focus in the isthmic region, which remained following the previous laparoscopic salpingectomy of the right tube (Figure-1).

The left ovary was observed in its natural state, and the presence of a corpus luteum cyst in the right ovary was confirmed intraoperatively. The ectopic pregnancy focus was surgically excised, and the operation was successfully concluded after effective control of the bleeding. Intraoperatively, 2 units of erythrocyte suspension were administered. Subsequently, the patient was discharged after a 3-day hospitalization period, having reported no complaints or complications. The pathology report confirmed the diagnosis of an ectopic pregnancy (Figure-2).

Discussion

The incidence of ectopic pregnancy has shown an increase compared to previous years, likely attributed to factors such as pelvic inflammatory disease, assisted reproductive techniques, and advanced maternal age. Ectopic pregnancy occurring in a residual tubal stump after salpingectomy has been sparsely documented in the literature (7). To our knowledge, our case represents the first reported instance of tubal stump ectopic pregnancy in Turkey.

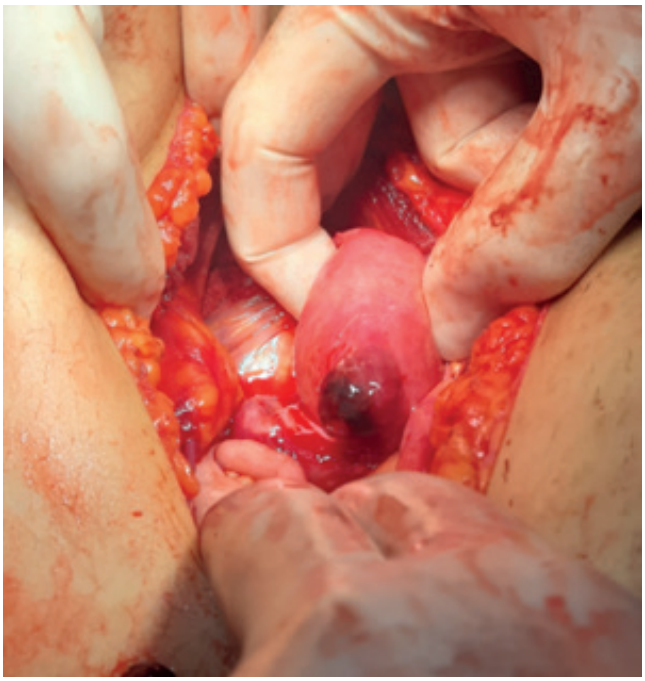

Figure 1. Tubal stump ectopic pregnancy (Intraoperative)

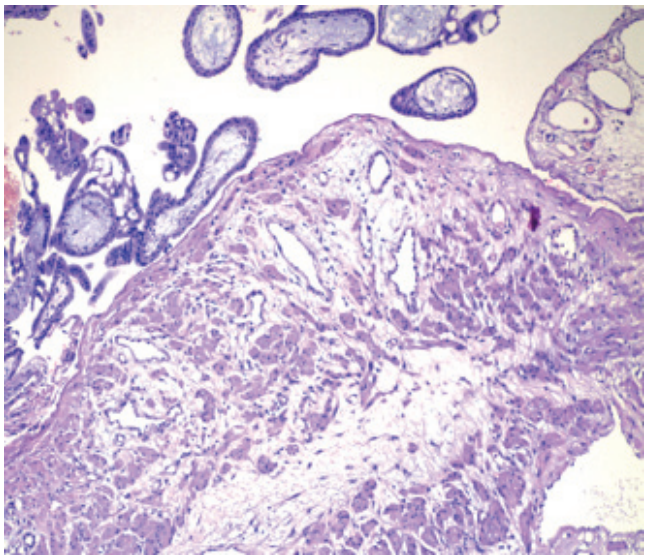

Figure 2. Histological image of tubal stump ectopic pregnancy

Various theories have been proposed to explain the mechanisms underlying recurrent ipsilateral ectopic pregnancy. In a case published by Zuzarte et al. in 2005, the authors emphasized that ectopic pregnancy occurring in the distal tube after partial salpingectomy may result from the emergence of spermatozoa from the salpingectomized tubular tip, leading to fertilization in the peritoneal space (8). Milingos et al. reported another mechanism in which the fertilized ovum could traverse a transperitoneal route from the intact tube to the salpingectomized tube (9). Takeda et al., drawing upon their own cases, proposed that fertilization occurs in the intact tube after ovulation on the same side, followed by transuterine passage of the zygote into the remnant tube (7). In our case, the presence of a corpus luteum observed both in ultrasonography and during laparotomy strongly suggests that ovulation occurred in the right ovary, on the side of the remnant tube. Based on this observation, two main mechanisms can be proposed. The first mechanism involves the secondary oocyte being released into the peritoneal cavity after ovulation, entering through the open peritoneal end of the tubal stump, and establishing an ectopic focus in the tubal stump after fertilization. The second possible mechanism is that the left fimbria captures the oocyte expelled into the peritoneal cavity from the contralateral ovary. After fertilization in the intact left tube, the resulting zygote implants itself transuterinely into the remnant tube. Despite these plausible explanations, it remains challenging to definitively establish the precise mechanism underlying tubal stump ectopic pregnancy.

Lou and Tulandi reported a remarkable 100% success rate in the surgical treatment of tubal stump pregnancy, while methotrexate (MTX) administration achieved approximately 83% success (10). Operative management

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has proven to be a favorable treatment option for this specific type of ectopic pregnancy (11). The literature also documents successful laparoscopic procedures utilizing suturing of the cornual defect, with the use of absorbable polyglactin for hemostasis following the application of an advanced bipolar device (12, 13). In our case, the expectant approach or administration of MTX was not feasible due to the patient's unstable vital signs, intraperitoneal bleeding, and signs of hemorrhagic shock. Although the laparoscopic approach is considered an appropriate surgical method in such cases (4), the preoperative laparoscopic preparation requires additional time compared to laparotomy. In our case, considering the urgency of the patient's condition, laparotomy was promptly performed without delay to address the shock-related findings.

Performing total salpingectomy instead of partial salpingectomy during ectopic pregnancy surgery, particularly in cases involving a ruptured ampullary region, can decrease the occurrence of tubal stump ectopic pregnancy. The selection of a preventive method for tubal stump ectopic pregnancy remains controversial due to its infrequent incidence and the lack of certainty regarding its mechanism of occurrence. Nevertheless, various options can be suggested to minimize the risk of recurrence. One of these options is to ensure the avoidance of a long tubal stump during the salpingectomy procedure (14). Leaving a small tubal stump is a common practice aimed at minimizing the risk of bleeding associated with the isthmic portion of the fallopian tube. Therefore, it is recommended to minimize the residual isthmic portion during salpingectomy to prevent the occurrence of endosalpingiosis and the formation of potential fistulas in the stump, where sperm can reach the ovum (2, 15).

In conclusion, the recurrence of ectopic pregnancy in the residual tubal stump following salpingectomy can have significant clinical implications. Diagnosing tubal stump ectopic pregnancy poses challenges, highlighting the importance of heightened awareness and early ultrasound examination, particularly in the early stages of pregnancy, for patients with a history of salpingectomy. It should be noted that recurrence can still occur even with extensive resection of the fallopian tube during total salpingectomy. Consequently, partial salpingectomy is not recommended as a surgical method for reproductive-age women. The prevention of ectopic pregnancy recurrence in the residual tubal remnant remains uncertain. Nevertheless, every effort should be made to promptly diagnose tubal stump ectopic pregnancy and implement preventive measures.

Consent to Participate: *All procedures conducted in studies involving human participants adhered to the ethical standards set by the institutional and/or national research committee, following the principles outlined in the 1964 Helsinki Declaration and its subsequent amendments, or comparable ethical standards. Informed consent was obtained from all individual participants who were included in the study.*

References

1. Saraiya M, Berg CJ, Shulman H, Green CA, Atrash HK. Estimates of the annual number of clinically recognized pregnancies in the United States, 1981-1991. American journal of epidemiology. 1999;149(11):1025-9.
2. Ko PC, Liang CC, Lo TS, Huang HY. Six cases of tubal stump pregnancy: complication of assisted reproductive technology? Fertility and sterility. 2011;95(7):2432.e1-4.
3. Perkins KM, Boulet SL, Kissin DM, Jamieson DJ. Risk of ectopic pregnancy associated with assisted reproductive technology in the United States, 2001-2011. Obstetrics and gynecology. 2015;125(1):70-8.
4. Sun F, Yang S, Yang Y, Liu X, Xu H. Laparoscopic Management of 42 Cases of Tubal Stump Pregnancy and Postoperative Reproductive Outcomes. Journal of minimally invasive gynecology. 2020;27(3):618-24.
5. Samiei-Sarir B, Diehm C. Recurrent ectopic pregnancy in the tubal remnant after salpingectomy. Case reports in obstetrics and gynecology. 2013;2013:753269.
6. Sturlese E, Retto G, Palmara V, De Dominici R, Lo Re C, Santoro G. Ectopic pregnancy in tubal remnant stump after ipsilateral adnexectomy for cystic teratoma. Archives of gynecology and obstetrics. 2009;280(6):1015-7.
7. Takeda A, Manabe S, Mitsui T, Nakamura H. Spontaneous ectopic pregnancy occurring in the isthmic portion of the remnant tube after ipsilateral adnexectomy: report of two cases. The journal of obstetrics and gynaecology research. 2006;32(2):190-4.
8. Zuzarte R, Khong CC. Recurrent ectopic pregnancy following ipsilateral partial salpingectomy. Singapore medical journal. 2005;46(9):476-8.
9. Milingos DS, Black M, Bain C. Three surgically managed ipsilateral spontaneous ectopic pregnancies. Obstetrics and gynecology. 2008;112(2 Pt 2):458-9.
10. Lau S, Tulandi T. Conservative medical and surgical management of interstitial ectopic pregnancy. Fertility and sterility. 1999;72(2):207-15.
11. Peker N, Aydeniz EG, Gündoğan S, Şendağ F. Laparoscopic Management of Heterotopic Istmocornual Pregnancy: A Different Technique. Journal of minimally invasive gynecology. 2017;24(1):8-9.
12. Chien W-H, Liang C-CJGS. Repeated ectopic pregnancy on the tubal stump after laparoscopic salpingectomy. 2005;2(4):311-2.
13. Nishida M, Miyamoto Y, Kawano Y, Takebayashi K, Narahara H. A case of successful laparoscopic surgery for tubal stump pregnancy after tubectomy. Clinical medicine insights Case reports. 2015;8:1-4.
14. Gao MY, Zhu H, Zheng FY. Interstitial Pregnancy after Ipsilateral Salpingectomy: Analysis of 46 Cases and a Literature Review. Journal of minimally invasive gynecology. 2020;27(3):613-7.
15. McCausland A. Endosalpingosis ("endosalpingoblastosis") following laparoscopic tubal coagulation as an etiologic factor of ectopic pregnancy. American journal of obstetrics and gynecology. 1982;143(1):12-24.

Case Report

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Acute Emphysematous Cholecystitis Rarely Accompanied by Necrotized Cystic Duct: A Case Report

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Abstract

Emphysematous cholecystitis is an acute abdominal disease characterized by gas in the gallbladder lumen and wall. Emphysematous cholecystitis and related cystic duct necrosis are rare, but if not noticed, they can cause a mortal picture up to perforation and sepsis. In this article, we present a case of emphysematous cholecystitis involving gangrenous gallbladder and necrotizing cystic duct, which developed suddenly in an immunosuppressive patient who presented to the emergency department with abdominal pain and was treated with rapid emergency successful surgery.

Keywords: Abdominal pain, emergency surgery, emphysematous cholecystitis, gangrenous cholecystitis, necrotizing cystic duct

Introduction

Acute emphysematous cholecystitis (EC) is a rare cause of acute abdomen characterized by the presence of gas in the gallbladder lumen, wall, and sometimes in the bile duct (1). It is usually caused by gas-forming bacteria. Gallbladder ischemia, which develops as a result of vascular insufficiency due to endarteritis, can be seen among the causes (2). EC immunosuppression may be associated with uncontrolled diabetes mellitus and advanced age. The mortality and morbidity of EC are high due to the high risk of perforation and sepsis. Therefore, EC is a condition that requires urgent surgical treatment (3). Patients present to the emergency department (ED) most frequently with right upper quadrant pain. The symptoms of EC can sometimes be vague and indistinguishable from uncomplicated acute cholecystitis. Fever, nausea, and vomiting are the other main clinical symptoms. Demonstrating the presence of gas in the gallbladder wall and lumen with computed tomography (CT) is necessary for differential diagnosis (5,6). In this article, we present a case of emphysematous cholecystitis involving the gangrenous gallbladder and necrotizing cystic duct, which developed suddenly in an immunosuppressed patient who presented to the ED with complaints of abdominal pain, constipation, loss of appetite, and nausea, and was treated with rapid emergency surgery.

Case Report

A 68-year-old man presented to the ED with complaints of widespread abdominal pain, constipation, anorexia and nausea for 3 days. His past medical history included chronic obstructive pulmonary disease (COPD) for 10 years and non-small cell lung cancer for 3 years. He was undergoing immunotherapy treatment for lung cancer. There was no previous history of gallstones. On physical examination, he was conscious and had orientation-cooperation. His blood pressure was 110/65 mmHg, heart rate was 115/min (rhythmic), oxygen saturation was 93%, fever was 36.7°C, and respiratory rate was 22/min. There was widespread tenderness on abdominal examination, Murphy's sign was positive, defense and rebound signs were positive. In blood tests, leukocyte count 10.37x109/L, neutrophil count 8.34x109/L, hemoglobin 11 g/dl, platelet count 187x109/L, C-reactive protein 235.02 mg/L, aspartate aminotransferase 13 U/L, alanine aminotransferase 6.2 U/L, alkaline phosphatase 65 U/L, gamma glutamyl transferase 36 U/L, lactate dehydrogenase 306 U/L, total bilirubin 1.08 mg/dl. In the standing direct abdominal X-ray, a large oval radiolucent area was seen around the radiopaque area in the region compatible with the gallbladder lodge (Figure 1). Abdominal CT with oral contrast was performed because the patient had abnormal kidney function tests (creatinine

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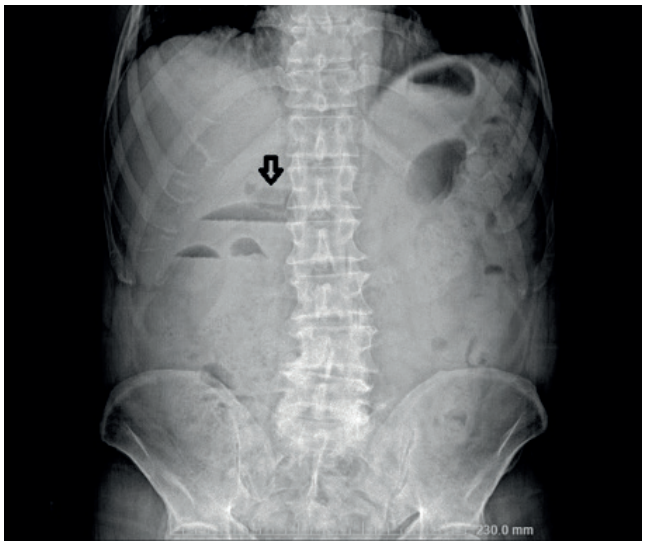

Figure 1. Gas image in the gallbladder wall on the direct radiograph, indicated by the arrow.

and blood urea nitrogen). In addition, oral contrast-enhanced abdominal CT was preferred to better visualize the presence of air-fluid levels in the intestines. The reason for choosing this was explained to the patient. Air-fluid level in the gallbladder lumen, air image in the gallbladder wall and cystic duct were present in CT with oral contrast (Figure 2). The patient was taken to an emergency operation with a preliminary diagnosis of EC. Laparoscopic cholecystectomy was started with the

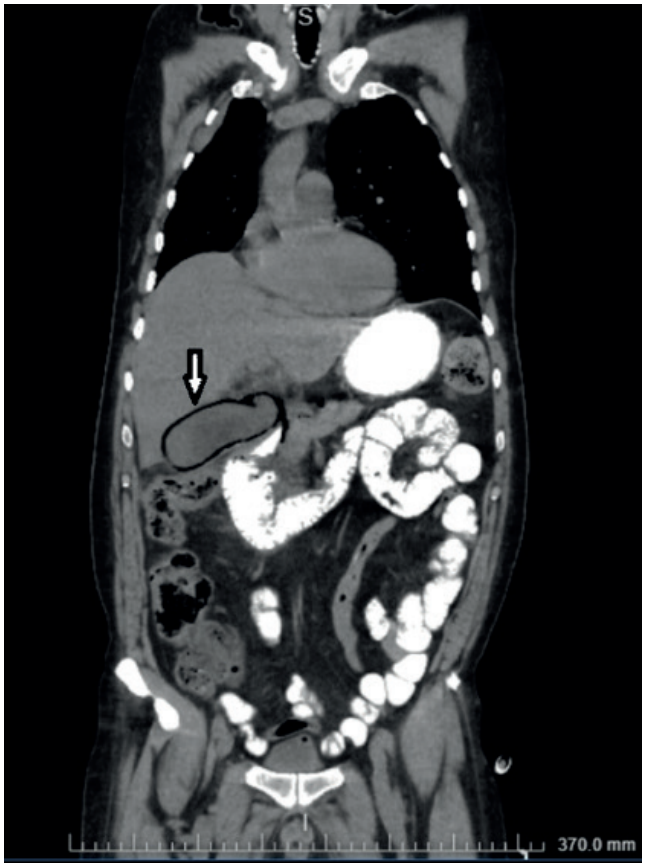

Figure 2. Gas image in the gallbladder wall in computed tomography, indicated by arrow.

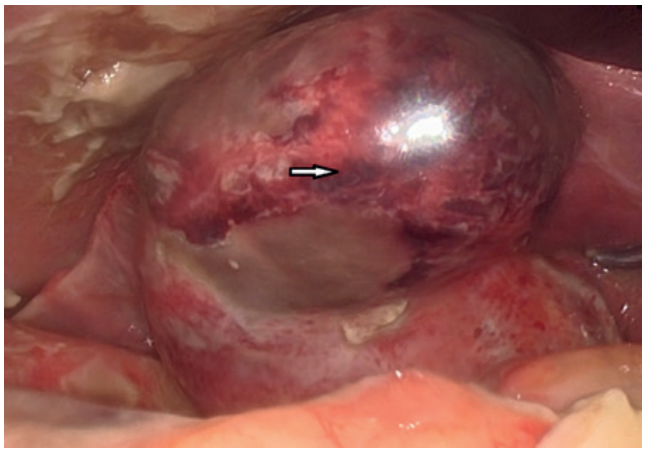

Figure 3. Gangrenous gallbladder, indicated by arrow.

classical 4 trocar method. The omentum, hepatic flexure, and proximal transverse colon were attached to the fundus of the gallbladder. The duodenum was attached to the gallbladder. After these areas were separated, the gallbladder was exposed. The gallbladder was hydropic and most of its anterior wall was gangrenous (Figure 3). Air bubbles appeared to come out of the wall as the gallbladder was suspended. The triangle of Callot was tried to be revealed. Necrosis of the cystic duct was observed (Figure 4). The cystic duct was clipped and cut, seeing intact tissue closest to the common bile duct. Then, the gallbladder was separated from the liver lodge and taken out of the subxiphoid incision with the help of an endobag. Drainage and intravenous antibiotics were applied to the patient in the postoperative period. The patient was successfully treated and was discharged from the hospital on the 6th postoperative day. The pathology of the resected gallbladder was reported as chronic cholecystitis material with full-thickness infarct necrosis in the entire organ and cystic duct.

Discussion

EC is an emergency surgical condition that should be considered in the differential diagnosis of patients presenting to the ED with the acute abdomen (7). Although EC is

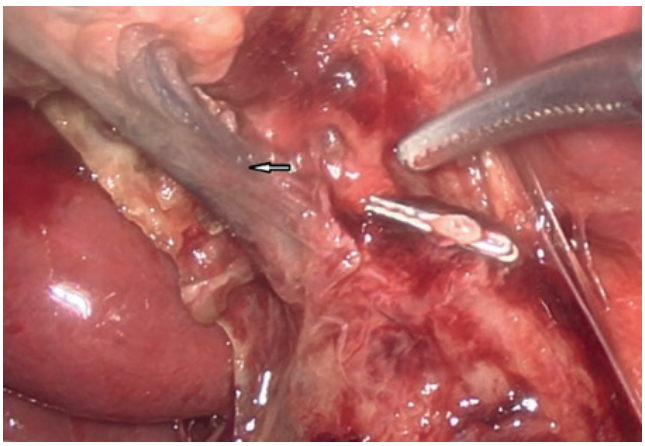

Figure 4. Necrosis cystic duct, indicated by arrow.

thought to be a type of acute cholecystitis, some features are different. A higher mortality rate (15-20%), more frequent gangrenous cholecystitis (75%), more frequent perforation (20%), and more frequent Murphy sign negativity can be seen in EC (8). EC progresses in 3 phases. Gas is seen in the gallbladder lumen in the first stage, in the gallbladder wall in the second stage, and in the pericholecystic tissues in the third stage.

With careful observation, EC findings are frequently detected on direct abdominal radiographs. However, sometimes the pathology may not be seen clearly on direct radiographs. This requires other views. CT is the most specific and sensitive imaging method that shows these gas presences for diagnosis. Recent studies still support the use of oral contrast. In a study conducted by Jensen et al. on cancer patients admitted to the ED, it was shown that abdominal CT performed with oral contrast material provides an acceptable benefit in diagnosing emergencies for oncology patients (9).

Today, complications of the gallbladder have decreased thanks to the early diagnosis and treatment of cholecystitis. Gangrenous cholecystitis is a serious complication of EC (10,11). In our case, acute abdomen accompanied by constipation first suggested ileus. However, the absence of air-fluid levels and distension on direct abdominal X-ray and abdominal CT ruled out the ileus. Severe gas found around the gallbladder on abdominal CT made us think of severe emphysematous cholecystitis. The gallbladder of the patient who was taken for an emergency laparoscopic operation had a gangrenous appearance. In a case of EC presented in the literature, the gallbladder was gangrenous and was successfully treated laparoscopically (12). In another case presented, necrotizing EC was detected without a predisposing factor and was successfully treated laparoscopically (13). In our case, like these cases in the literature, the operation was successfully completed laparoscopically. There was no need to convert to open surgery. In the literature, it has been shown that cystic duct necrosis can rarely accompany classical complications in surgical interventions (14). In our case, it was observed that the cystic duct had a necrotized appearance during the laparoscopic operation and it was successfully resected.

Conclusion

Patients presenting to the ED with the complaint of abdominal pain should be evaluated for acute cholecystitis, which is one of the causes of acute abdomen. Emphysematous cholecystitis, a type of acute cholecystitis, should be kept in mind if there are predisposing factors such as diabetes mellitus, congestive heart failure, and immunosuppressive therapy in cases where acute cholecystitis is considered. Early diagnosis and successful surgical treatment save the patient from the fatal complications of emphysematous cholecystitis.

References

1. Villalba JS, Inés CG, Mónica MG. Acute emphysematous cholecystitis due to clostridium perfringens: a rare entity requiring aggressive and early treatment. Rev Esp Enferm Dig 2022; 114(6): 357-8.
2. Vera V, Sharma A, Townson AT, Azeem Q, Malam Y, Mathews J. Emphysematous cholecystitis in a patient with porcelain gallbladder. J Surg Case Rep 2023; 2023(1): rjac600.
3. Pulle MV, Mittal T, Dey A, Malik VK. Emphysematous cholecystitis: rare scenario revisited. Indian J Surg 2019; 81: 298-9.
4. Liao CY, Tsai CC, Kuo WH, Ben RJ, Lin HC, Lee CC et al. Emphysematous cholecystitis presenting as gas-forming liver abscess and pneumoperitoneum in a dialysis patient: a case report and review of the literatüre. BMC Nephrol 2016; 17(1): 1-8.
5. Xiao Y, Salem R, Maula S, Belanger C, Tiesenga F. Spontaneous Gallbladder Perforation: A Case Report. Cureus 2022; 14(12).
6. Chen MY, Lu C, Wang Y, Cai XJ. Emphysematous cholecystitis in a young male without predisposing factors: a case report. Medicine 2016; 95(44): e5367.
7. Mechineni A, Manickam R, Singh B. Emphysematous cholecystitis: A deadly disguise of a common culprit. Clin Case Rep 2021;9:e04341.
8. Safwan M, Penny SM. Emphysematous cholecystitis: a deadly twist to a common disease. J Diagn Med Sonogr 2016;2(3):131-7.
9. Jensen CT, Blair KJ, Le O, Sun J, Wei W, Korivi BR et al. Utility of CT oral contrast administration in the emergency department of a quaternary oncology hospital: diagnostic implications, turnaround times, and assessment of ED physician ordering. Abdominal Radiology 2017; 42:2760-8.
10. Schiappacasse G, Soffia P, Silva C, Villacres F. Computed tomography imaging of complications of acute cholecystitis. Indian J Radiol Imaging 2018;28(02):195-9.
11. Yamaguchi T. Detecting emphysematous cholecystitis using plain radiograph. Erciyes Med J 2022;0(0):0.
12. Katagiri H, Yoshinaga Y, Kanda Y, Mizokami K. Emphysematous cholecystitis successfully treated by laparoscopic surgery. J Surg Case Rep 2014;2014:rju027.
13. Chen MY, Lu C, Wang Y, Cai XJ. Emphysematous cholecystitis in a young male without predisposing factors: a case report. Medicine 2016;95:e5367.
14. Vela A, Cantu GGO, Hernández ARM, Rodríquez CGC. Cystic duct necrosis, as a laparoscopic finding. BMJ Case Rep 2021;14:e239340.

Case Report

Journal of Emergency Medicine Case Reports

HSV-2 Associated Meningitis Case: A Challenging Diagnosis in An Immunocompetent Woman

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Abstract

Herpes simplex virus (HSV), is a member of the herpesviridae family which is transmitted through close contact and can result in lifelong latent infections. Herpes simplex virus type-2 (HSV-2) infections occur through sexual contact and the primary infection of HSV-2 is usually asymptomatic in immunocompetent adolescents. HSV-2-associated aseptic meningitis is rarely seen in healthy individuals. Herein, we report a rare case of meningitis, associated with HSV-2, without the presence of genital lesions. A healthy, 40-year-old female presented to the emergency service with unremitting headache, vomiting, and nausea. Her cerebrospinal fluid (CSF) analysis revealed elevated protein level, increased cell count with lymphocyte predominance, and positive quantitative real-time polymerase reaction (HSV-2) but negative bacterial culture and gram staining. The cranial MRI revealed meningeal contrast enhancement. The patient was administered acyclovir for 10 days during her hospital stay and she was discharged without any neurological sequela. This case report shows that HSV-2 meningitis can occur in immunocompetent individuals via re-activation and should always be considered by clinicians even in the absence of genital lesions.

Keywords: Herpes simplex virus type 2, meningitis, CSF, molecular testing

Introduction

Herpes simplex virus (HSV), a member of the *herpesviridae* family, is a double-stranded DNA virus that spreads through hematogenous dissemination and primarily affects epithelial cells. HSV transmission occurs through close contact and causes latent lifelong infections. The infections associated with HSV can be asymptomatic, mild, or life-threatening. HSV and the host immune system interaction define the infection outcome. HSV affects the epithelial cells in the mucosa or skin during the primary infection [1]. Clinical presentation of HSV infections can be orofacial, and genital ulcers [2]. Herpes simplex virus type 1 (HSV-1) is predominantly found in the oral region, while herpes simplex virus type 2 (HSV-2) causes recurrent genital ulcers [3]. HSV-2 infections occur through sexual contact and the primary infection of HSV-2 is usually asymptomatic in immunocompetent adolescents. Most patients who have HSV-2 infection are likely unaware of their infection and subclinical viral shedding. Meningitis can develop without a known genital herpetic lesion or prior history of genital herpes infection. HSV-2 is currently regarded as the second cause of viral meningitis after varicella zoster virus (VZV) [4].

HSV is able to establish latency in neurons and cause persistent infections in the neuronal ganglia, where it can periodically reactivate and cause recurrent infections after entering the host. HSV is responsible for different central nervous system (CNS) clinical presentations like myelitis, brainstem encephalitis, and aseptic meningitis due to its neurotropic structure. CNS infection could result in acute infection and inflammation leading to high morbidity and mortality. Generally, HSV-1 causes encephalitis whereas HSV-2 is responsible from meningitis. Neurological diseases, associated with HSV-2, arise from the primary infection or latent infection of HSV-2, through reactivation after becoming dormant within the sensory ganglia [5]. In HSV-2 infection, different components of neuroaxis including the retina, cranial nerves, spinal cord, brain, brainstem, and nerve roots can be affected apart from the meninges. Headache, neck stiffness, fever, nausea, vomiting, myalgia, photophobia, and phonophobia are symptoms observed in HSV-2 associated meningitis. HSV-2-associated aseptic meningitis, due to primary genital herpes, occurs in 36% of women and 11% of men, and hospitalization is required in one in six of these individuals. Occasionally, the only clinical manifestation of lately acquired HSV-2 infection is aseptic meningitis.

Diagnosis of HSV-2 could be performed using serum antigen detection, viral culture, detection of the virus using electron microscopy and polymerase chain reaction (PCR). Viral isolation of HSV-2 is rarely used; therefore, PCR is the gold standard for diagnosis of HSV-2-DNA in the

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cerebral spinal fluid (CSF). It has high specificity (100%) and sensitivity (95%).

In this report, an aseptic meningitis case confirmed by CSF RT-PCR for HSV-2 in the absence of genital lesions was presented.

Case Report

A 40-year-old woman was admitted to the emergency department of Near East University Hospital with complaints of headache over the previous 10 days. On admission day, she reported myalgia beginning that day. During examination in the emergency department, her vitals were stable and her body temperature was normal (temperature: 36°C, Glasgow Coma Scale:15; blood pressure: 130/70 mmHg). Biochemical blood analysis results indicated CRP was mildly elevated (2,55 mg/dL), whereas urea, creatinine and liver function tests (AST and ALT) were normal.

Neurological examination revealed no meningeal irritation. Following her examination, MRI was suggested and she was discharged. Due to unremitting headache, the patient was admitted to another medical centre and she reported being prescribed antibiotics, although she could not remember the exact medication. The patient was relieved after medication but her headache got worse and she reported repeated nausea and vomiting throughout the night. Next morning, she was re-admitted to the first hospital for a detailed neurological examination in which neck stiffness, phonophobia and osmophobia were found to be positive. The patient's cranial MRI revealed meningeal contrast enhancement (Figure 1).

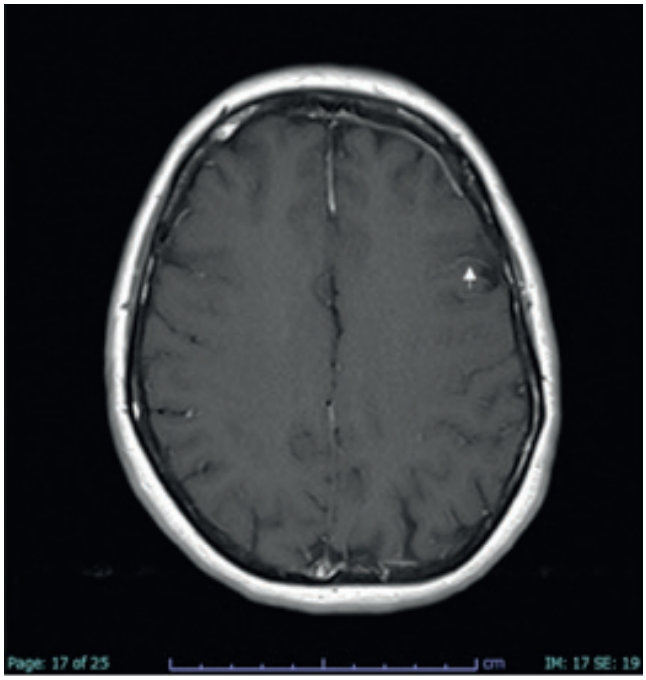

Figure 1. Patient cranial MRI indicating meningeal contrast enhancement (shown with an arrow)

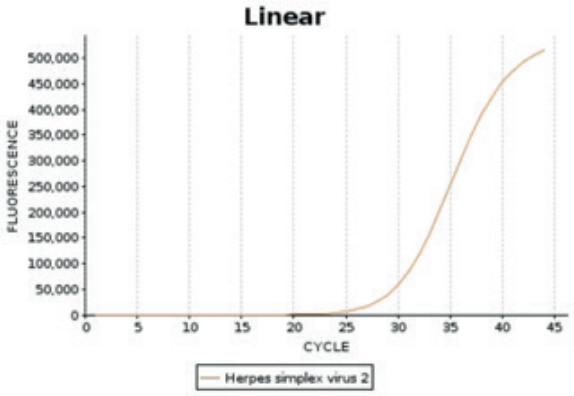

Figure 2. RT-qPCR amplification of Herpes Simplex Virus-2 DNA in the patient CSF sample

She was referred to the inpatient ward and an immediate lumber puncture was performed. The patient's CSF was clear and contained a high leukocyte cell count of 1,118 cells/µL with 98% lymphocytes and 2% polymorphonuclear neutrophils (PMNs), elevated protein level (308,2 mg/dL) and decreased glucose (38 mg/dL) and sodium levels (139 mmol/L). The chlorine level was in normal range (121 mmol/L). The gram staining was negative and the bacterial culture of CSF yielded no growth. Qiastat-DX Meningitis/Encephalitis Panel, including bacterial, viral, and fungal pathogens, was used for the molecular analysis of the CSF and was positive for HSV-2 with a cycle threshold (Ct) of 27.6 (Figure 2).

The patient was immediately administered acyclovir intravenously three times a day for 10 days. Following administration of acyclovir, the patient's symptoms started to improve on day 2. The patient's headache gradually resolved and she was discharged in 2 weeks. After discharge, the patient was followed up till complete resolution of symptoms and no neurological sequelae was observed.

Discussion

The patient presented in this case showed symptoms of unremitting headache, neck stiffness, and symptoms lasted two weeks. Investigation of laboratory results indicated a CSF pleocytosis with mononuclear predominance, and positive RT-qPCR test results for HSV-2, indicating early infection or reactivation, and resulting in the diagnosis of HSV-2 meningitis.

The wide range of neurological symptoms, including myelitis, encephalitis, meningitis, and polyradiculopathy, are associated with HSV infections. CNS can be invaded both by HSV-1 and HSV-2. Rarely, HSV-2 infections cause pulmonary infections, esophagitis, and meningitis and can be seen in immunocompetent individuals. The neurological manifestations of HSV-2 are caused by primary infection of HSV-2 or reactivation of latent HSV-2 [6]. Aseptic meningitis

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has been linked to HSV-2 in both sporadic cases as well as in recurrent cases, termed Mollaret's meningitis [7]. HSV-2 is capable of staying dormant in the sensory neurons of the dorsal root ganglia after primary infection, and retrograde seeding of the virus causes recurrent meningitis [8]. HSV-2 frequently results in benign meningitis due to primary genital infection. However, more than 80% of cases do not have a genital lesion, and HSV-2 meningitis could occur in the absence of the genital rash [9]. The molecular analysis of CSF aids in rapid diagnosis and characterization of HSV infection. The PCR test for HSV-2 has a high sensitivity and specificity; therefore, it can be a useful diagnostic marker. Diagnosis of HSV-2 increases via multiplex-PCR diagnostic systems, and excessive empiric antimicrobial therapy rate decreases due to the use of multiplex-PCR systems. Many HSV-CNS diseases, including mild infections, can be diagnosed by PCR testing. Detection of HSV, even in patients without herpetic shedding, enables the identification of more HSV patients.

The case presented in this report is an example of HSV-2-associated meningitis without genital rash. Consistent with the literature, the patient presented here did not have a genital rash at the time of admission, although the patient stated having a genital herpes infection earlier in life. The elevated protein concentration and normal glucose levels are consistent with a typical CSF profile of viral meningitis. Moreover, elevated CSF protein levels have been observed in patients with herpesviruses [10]. The elevated protein levels observed in the patient has been commonly detected in HSV-2-associated meningitis cases. HSV-1 infection is reported to be mostly presented in 50 to 60 years of age, whereas HSV-2 infected patients usually belong to the 20-40 age group. The patient in this case report is 40 years old and immunocompetent individual.

In the current case study, differential CSF count was suggestive of a viral cause, and it was confirmed via PCR testing. Predisposing factors in HSV-2 meningitis are not clear but HSV-2 should be suspected even in the absence of genital symptoms. The availability of CSF PCR assays aids in rapid diagnosis and immediate care. In HSV-2 associated meningitis cases, treatment should immediately begin for 14 days to prevent any neurological sequelae.

Conclusion

In conclusion, HSV-2 can present as various CNS infections and may lead to meningitis following primary infection both in immunocompetent and immunocompromised individuals. As highlighted by the current case report, HSV-2 meningitis can occur in immunocompetent individuals and should always be considered by the clinicians even in the absence of genital lesions.

References

1. Zhu S and Viejo-Borbolla A. (2021) Pathogenesis and virulence of herpes simplex virus. *Virulence*, 12(1); 2670-2702.
2. Omland LH, Vestergaard BF and Wandall JH (2008) Herpes simplex virus type 2 infections of the central nervous system: A retrospective study of 49 patients. *Scandinavian Journal of Infectious Diseases*, 40; 59-62.
3. Miller S, Mateen FJ, Aksamit Jr AJ (2013) Herpes simplex virus 2 meningitis: a retrospective cohort study. *J. Neurovirol*, 19; 166-71.
4. Grinney, M and Mohseni MM (2022) Recurrent bening lymphocytic (Mollaret's) meningitis due to herpes simplex virus type 2. *Bayl Univ Med Cent*, 35 (6); 820-821.
5. Berger JR and Houff S (2008) Neurological Complications of Herpes Simplex Virus Type 2 Infection. *Arch Neurol,* 65(5), 596-600.
6. Kadayakkara DK, Candelaria A, Kwak YE and Loeser C (2016) Herpes Simplex Virus-2 Esophagitis in a Young Immunocompetent Adult. *Case Rep Gastrointest Med.*, doi: 10.1155/2016/7603484 .
7. Chand S, Thapa S, Gautam K, Twayana AR, Laguio-Vila MR and Elsourbagy T. (2021) Bening Recurrent Aseptic Meningitis (Mollaret's Meningitis) in an Elderley Male: A Case Report. *J Nepal Med Assoc*, 59 (241): 916-918.
8. Sherchan R, Shrestha J, Omotosho YB, Dyatlova N and Nepomuceno JS. (2021) Herpes Simplex Virus-2 Meningitis Masquerading as Pseudotumor Cerebri. *Cureus*, 13(6); 1-5.
9. Davies N, Tang J and Ward KN (2004) Herpes simplex virus type 2 and recurrent meningits. *Lancet,* 364, 501-502.
10. O'Sullivan CE, Aksamit AJ, Harrington JR, Harmnsen WS, Mitchell S and Patel R (2003) Clinical Spectrum and Laboratory Characteristics Associated with Detection of Herpes Simplex Virus DNA in Cerebrospinal Fluid. *Mayo Clin Proc*, 78; 1347-1352.

Case Report

Journal of Emergency Medicine Case Reports

Recluse Spider Bite (Loxosceles sp.): A case report from Jordan

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Abstract

Loxosceles is a genus of spiders belongs to the family Sicariidae, known as recluse spiders. These spiders are considered venomous and are distinguished by three pairs of eyes, arranged in triangular pattern. In Jordan, only *Loxosceles rufescens* was recorded. A 75-year-old female with history of hypertension was bitten by a recluse spider. The case developed cellulitis and secondary infection at the site of the bite. The patient showed no response to the treatment with antibiotics either at home or in the emergency department. She was admitted as an inpatient and given Tinam (Cephalosporin / 4th generation). The patient left the hospital after improvement of the symptoms on day 14. Bite of *Loxosceles* spider cause serious poisoning and lead to severe skin infection that needs hospitalization.

Keywords: *Loxosceles*, bite, poisoning, Jordan, Recluse spider.

Introduction

Loxosceles spiders are of medical importance. Their bites cause symptoms range from local lesions to serious dermonecrotic ones that may reach up to 30 cm in diameter (1). In addition, the venom can cause renal failure and hematological abnormalities in severe cases. Few patients brought the spider that caused the injury to the hospital for identification, making the diagnosis of the spider bites difficult and frequently presumptive (2). In this report, the patient developed sever dermonecrotic wound and systemic symptoms likely secondary to *Loxosceles* spider bite. This report is the first documented case of spider bites in Jordan

Case Report

A 75-year-old woman with no medical history, except hypertension, was presented to Al-Mafraq Government Hospital in August suffering from a painful wound on her left lower limb. The patient reported that a brown spider has bitten her extremity while she was sitting at home. Initial symptoms (included acute ankle pain, mild swelling, redness, and itching) took less than 60 minutes to appear.

The patient received anti-inflammatory drugs, but without response and the symptoms persisted. After 12 hours, ecchymosis was noted which forced the patient to refer to the emergency department at the hospital. The patient received anti-inflammatory drugs consist of I.V hydrocortisone and Dral antibiotic and was discharged to the house with close observation. The symptoms persisted and became intense, forcing the patient to require hospitalization again. Routine blood analysis was performed with increase in WBC and ESR (Table 1). Medication was administered and the patient was discharged. Over the next 3 days, the case was deteriorated, and blisters appeared (Figure 1). The patient again seek medical attention.

Table 1: Results of the Blood Tests upon Second Visit.

Parameter	Patient value	Reference value
WBC count	19 X 10^3	4.50-11.00 X $10^3/\mu L$
Hemoglobin	10	12.0-15.7 g/dL
Platelet count	200 X 10^3	140-440 X $10^3/\mu L$
Creatinine	1.7	0.50-1.50 mg/dL
Erythrocyte Sedimentation Rate (ESR)	150	0 to 29 mm/hr
C-reactive protein	+ve	0.8-1.0 mg/dL

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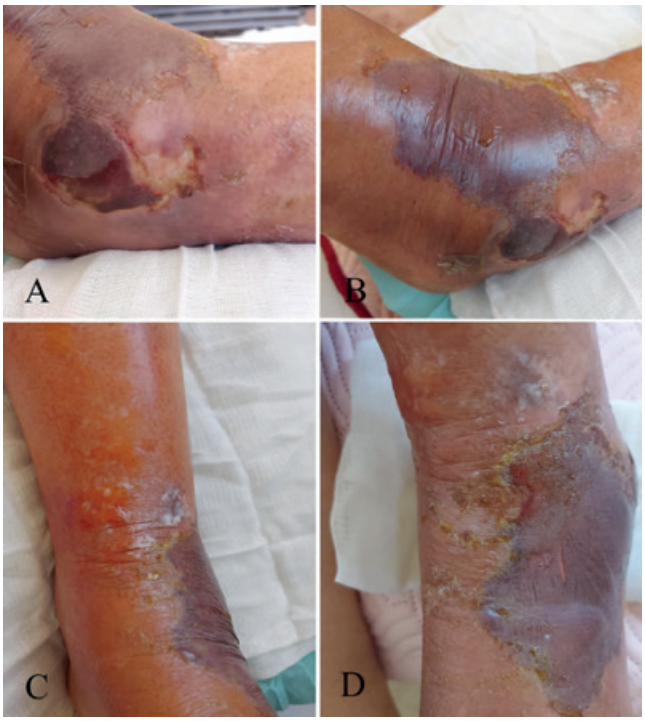

Figure 1. A. Erythema of skin with area of ulceration covered partially by dark necrotic crusty tissue (eschar formation). **B.** Erythema with subepidermal bullous formation which is oozing serous fluid with adjacent ulcer covered partially by dark necrotic tissue (eschar formation). **C & D.** Erythema with associated bullous formation with early necrotic changes at the edges. Crust formations at viable skin

The patient started on a broad-spectrum antibiotics (flagyl and vancomycin). CT scan of the injured leg excluded necrotizing fasciitis and osteomyelitis, the result showed normal foot and ankle. Moreover, blood culture and methicillin-resistant *Staphylococcus aureus* (MRSA) screen were ordered with negative result. After one week, skin necrosis developed with blisters with formation of green pus. Previous antibiotics were discontinued and **Tinam 4th generation** (Cephalosporin) was administered. The case started to improve, however with persistent swelling, redness, discharge, and pain. Tinam was continued for another week and notable progress was observed. After 14 days, the patient was discharged with advice to seek for local wound care and using the prescribed antibiotics.

Discussion

Loxosceles is a genus of recluse spiders known as fiddle-backs or violin spiders. This genus includes about 133 species, the most common ones are *L. laeta*, *L. reclusa,* and *L. rufescens* (3). The species *laeta* is known as the Chilean recluse spider and it is native to South America, however it has been introduced into several new areas (4). *Loxosceles reclusa* commonly known as the brown recluse spider have a global distribution3. The third species, *rufescens* is known to occure in the Mediterranean region, but now recorded outside its native range and considered one of the most invasive spiders' species in the world. In Jordan, only *L. rufescens* was recorded (5).

The spiders of Jordan were studied with 57 species recorded (5, 6). In the current case, we could not confirm the species of the spider. The patient did not bring the specimen to the hospital, and just mentioned that the spider was brown. So, the bite presumptively identified as a bite of *Loxosceles* spider.

Loxosceles spider bite presents four clinical categories (7); (i) Unremarkable (restricted localized damage and the lesion spontaneously heals), (ii) Mild (redness, itching, and small lesion spontaneously heals) (iii) Dermonecrotic (necrotic skin lesion), (iv) Systemic or viscerocutaneous (impacting the circulatory system, extremely uncommon, and perhaps lethal). The current case can be considered Dermonecrotic as it includes sever cellulitis and tissue necrosis.

The necrotic wound-caused by the spider's bite-arises because of the venom components. The venom of *Loxosceles* spiders contains several enzymes and biologically active compounds including phospholipases D, the major dermonecrotic factor (8). This *Loxesceles* venom enzyme modifies the membrane raft's structure, which activates a protease on the membrane. This will cause cell necrosis and proteolytic cleavage of cell surface proteins.

Presented is a case of a severe necrotic ulcer secondarily caused by a spider bite. *Loxosceles* bite frequently offers a diagnostic problem, unless the patient have the spider for accurate identification. In the current case, the patient saw a spider around the biting time. In a study included 111 cases of brown recluse spider bites, only 22 patients have seen a spider delivering a bite but without capturing the arachnid, moreover 78 patients were diagnosed completely on clinical manifestations (9).

Diagnosis solely depends on the clinical presentations (signs, symptoms) and the history of bite including observing or capturing the spider. Currently, there is no diagnostic test available commercially, but some laboratorial tests are in progress (10).

Symptoms of the recluse spider bite (loxoscelism) range from painless signs at the bite site, skin necrosis, and, less frequently, systemic effects. The pain begins within the first few hours and gets worse with erythema and pruritus (11). In our patient, the pain begun within the first hour. Moreover, a dusky, erythematous, ring-shaped area around the bite occurs 24 hours after the bite, and within 48–72 hours, it develops into an ischemic ulcer (11). Our case showed ischemic and necrotic ulcer after 48 hours (Figure 1). There have been instances where these ischemic ulcers have grown to a diameter of 30 cm, necessitating surgical debridement and, on rare occasions, skin grafts (9).

Moreover, the list of possible diagnoses for necrotic skin lesions is extensive and includes cellulitis, contact

dermatitis, anthrax, tularemia, Lyme disease, herpes simplex infection, sporotrichosis, toxic epidermal necrolysis, pyogenic gangrenosum, pyoderma gangrenosum, ecthyma gangrenosum, vasculitis, vascular insufficiency, Martorell ulcers, diabetes, medication reactions, thermal burns, and Chagas disease (11, 12). The current case, however, had lived in the area for a long time and had not recently left the country. She did not use any medications, have any recent contacts with illness, or have a history of immunological, endocrine, or rheumatologic disease. The patient had no history of methicillin-resistant *Staphylococcus aureus*, and laboratory test was negative. He had already finished two antibiotic treatments and showed no evidence of a persistent infection. There were no burns or injuries to the affected area. The lesions appeared during the summer, a time of increased *Loxesceles* activity. The likelihood of a mistake in this case is decreased by the clinical appearance and lack of other etiologies.

The severity of the spider bites symptoms depends on the quantity of venom injected, the victims' age, and how susceptible person is to the poison (highly allergic person). Steroids, dapsone, antibiotics, hyperbaric oxygen therapy, conservative wound management, and scar repair are used to treat *loxosceles* spider bites (12). However, neither one of these treatments has been shown to be effective in helping infected persons recover. Most cutaneous wounds heal successfully with standard wound care.

The current report is the first study documenting spider bites in Jordan. More attention should be paid to loxoscelism in Jordan. Recently, several *loxosceles* bites were recorded with increasing frequency in the neighboring countries like Iraq, Saudi Arabia, and Turkey (13-15).

Conclusion

In conclusion, diagnosis of *loxosceles* poisoning is not an easy task. The bite history should be considered if the patient reports the spider bite. In the current report, we presented a case of a 75-year-old female who developed sever dermonecrotic wound secondary to a recluse spider bite. The current case highlighted the difficulties of differentiation between loxoscelism and other necrotic soft tissue infections. Physicians should receive training to identify the bite of *loxosceles* based on epidemiological and clinical data available.

Acknowledgment
We would like to thank our patient for trusting us enough to share her case and health concerns.

Conflict of Interest
All authors declare that they have no conflicts of interest

References

1. Everson GW. Spider, Brown Recluse. In Wexler P, Bruce D, Anderson C, Peyster A. Editor. Encyclopedia of Toxicology. 2nd ed. Amsterdam: Elsevier; 2005. p. 73-4.
2. Abdelazeem B, Eurick-Bering K, Ayad S, Malik B, Kalynych Z. A case report of brown recluse spider bite. Cureus 2021; 13: e16663.
3. Taucare-ríos A, Nentwig W, Bizama G, Bustamante RO. Matching global and regional distribution models of the recluse spider *Loxosceles rufescens*: to what extent do these reflect niche conservatism? Med Vet Entomol 2018; 32(4): 490-96.
4. Gertsch WJ, Ennik F. The spider genus *Loxosceles* in North America, Central America, and the West Indies (Araneae, Loxoscelidae). Bull Am Mus Nat Hist 1983; 175: 264-360.
5. Amr ZS. Arthropods of medical importance in Jordan. Jordan Med J 1988; 22: 125-37.
6. Shakhatreh M, Zuhair A, Abu Baker M. Spiders of Jordan: A preliminary study. Turkish J biosci collect 2020; 15(1): 1-11.
7. Vetter RS. Spiders of the genus *Loxosceles* (Araneae, Sicariidae): a review of biological, medical, and psychological aspects regarding envenomation. J Arachnol 2008; 36(1): 150-63.
8. Lajoie DM, Zobel-Thropp PA, Kumirov VK, Bandarian V, Binford GJ, Cordes MHJ. Phospholipase D toxins of brown spider venom convert lysophosphatidylcholine and sphingomyelin to cyclic phosphates. PLoS ONE 2013; 8(8): e72372.
9. Norden PS, Phillips TJ. Brown recluse spider bite: a rare cause of necrotic wounds. Wounds 2005; 17(11): 304-12.
10. Stoecker WV, Green JA, Gomez HF. Diagnosis of loxoscelism in a child confirmed with an enzyme-linked immunosorbent assay and noninvasive tissue sampling. J Am Acad Dermatol 2006; 55 (5): 888-90.
11. Baden LR. Cutaneous loxocelism. N Engl J Med 2013; 369: 5.
12. Rees R, Campbell D, Rieger E, King LE. The diagnosis and treatment of brown recluse spider bites. Ann Emerg Med 1987; 16: 945-49.
13. Yigit N, Bayram A, Ulasoglu D, Danisman T, Corak Ocal I, Sancak Z. *Loxosceles* spider bite in Turkey (*Loxosceles rufescens*, Sicariidae, Araneae). J Venom Anim Toxins Incl Trop Dis 2008; 14: 178-87.
14. Bucur IJ, Obasi OE. Spider bite envenomation in Al Baha region, Saudi Arabia. Ann Saudi Med 1999; 19(1): 15-9.
15. Sharquie KE, Jabbar RI. Spider bites might present as cellulitis like in early cases and pyoderma gangrenosum like in late cases. J Turk Acad Dermatol 2020; 14(3): 70-5.

Case Report

Journal of Emergency Medicine Case Reports

An Intracranial Hemorrhage Complication: Terson Syndrome

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Abstract

Vitreous hemorrhage associated with subarachnoid hemorrhage is known as Terson's Syndrome (TS). However, it is also seen in the literature in cases of traumatic brain injury or intracranial hemorrhage. Management of visual manifestations is necessary in patients with intracranial hemorrhage.

A vitreous hemorrhage was found in the evaluation made due to visual symptoms in a patient who presented to the emergency department with intracranial hemorrhage. In addition to clinical findings, imaging techniques have an important place in the diagnosis of TS. Vitreous hemorrhage findings can be detected with imaging studies such as Computed Tomography (CT) and Magnetic Resonance Imaging (MRI).

In this case, the diagnostic findings and the importance of diagnosis in CT and MRI examinations in a patient with TS will be discussed. The purpose of this case report is to share the imaging findings of TS.

Keywords: Vitreus Hemorrhage, subarachnoid hemorrhage, terson syndrome, intracranial hemorrhage

Introduction

Terson was the first to report the occurrence of intraocular hemorrhage (IOH) in subarachnoid hemorrhage (SAH). In a 60-year-old male patient, he reported having spontaneous intracranial hemorrhage (ICH) with right-sided IOH and transient left-sided [1]. Pathophysiologically, an abrupt and transient increase in intracerebral pressure is thought to be transmitted through the optic nerve sheath, causing rupture of the retinal vessels due to intraocular venous hypertension. Besides clinical neurological symptoms, patients usually have decreased visual acuity. A multidisciplinary approach is required in the treatment of TS. After the vital stabilization of the patient is achieved, there are a wide range of treatment options ranging from conservative methods to vitrectomy to correct the visual impairment [2]. Despite being a well-defined entity in the ophthalmological literature, it has rarely been interpreted in the neurosurgery discussion of SAH [3]. Attention should be paid to the presence of other findings that may be overlooked in addition to the common findings in the case of trauma. In head trauma, which is one of the most common conditions in emergency departments, other findings should be considered in addition to radiologically investigated traumatic brain injury, parenchymal hemorrhage, and skull base fractures. In this case, we wanted to draw attention to Terson's Syndrome, which causes sequelae that can lead to permanent vision loss in the long term in patients with head trauma who applied to the emergency department.

Case Report

An 84-year-old male patient was admitted to the emergency department with complaints of decreased vision in his left eye, loss of movement in his right arms and legs, and speech disorder. Neurological examination revealed a Glasgow Come Score (GCS) of 11/15 and right hemiparesis with mild motor aphasia. He had a history of chronic hypertension, stroke, coronary artery disease and diabetes. CT scan showed acute hyperdense parenchymal hematoma approximately 5 cm diameter in the parietooccipital lobe and fluid-fluid level of hemorrhage in the left bulbus oculi. Peri/retrobulbar soft tissues appear normal (**Figure 1**). Fluid-fluid leveling that supports bleeding products was clearly seen in Fluid Attenuated Inversion Recovery (FLAIR) sequence MRI examination (**Figure 2**). TS was diagnosed by considering ICH and IOH. Hygienic and dietary measures, strict rest, monitoring the disappearance of vitreous bleeding with periodic follow-ups, and thus increasing visual acuity constituted the ophthalmologic treatment. Surgical interventions were not considered. The patient was followed up in the intensive care unit and his treatment was started.

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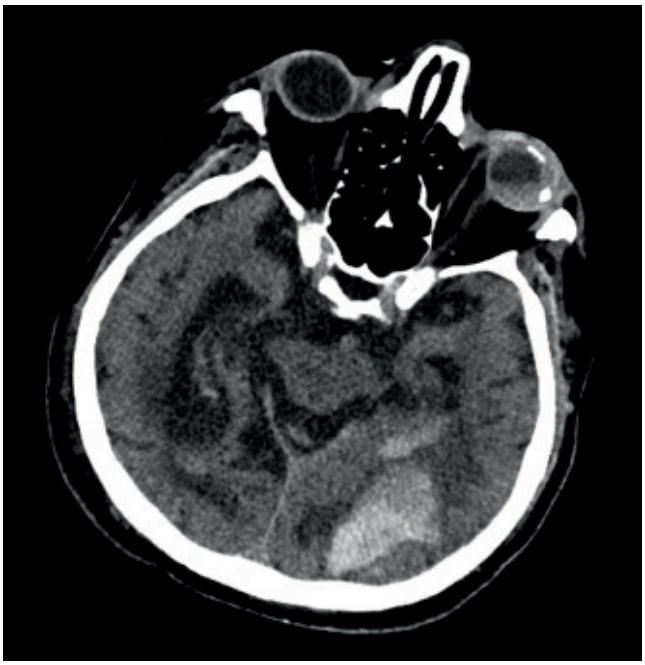

Figure 1. In the axial unenhanced CT image, bleeding products that level the left bulbus oculi and intraparenchymal hemorrhage in an area of approximately 5 cm at the level of the left parietooccipital borderzone are observed.

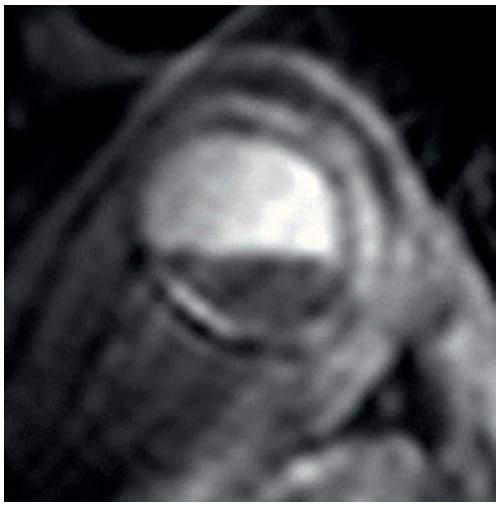

Figure 2. Axial FLAIR sequence MR image shows a leveling appearance with low signal intensity consistent with vitreous hemorrhage in the left bulbus oculi.

Neurologically, the process was favorable with progressive improvement in his clinical condition.

Discussion

TS is known as a secondary complication of SAH. The incidence of TS is defined as a variable in the literature and is reported between 10% and 50% after SAH. However, it seems to be underestimated in terms of its incidence and clinical course [3]. If not diagnosed early, it can cause serious ocular complications up to permanent blindness. In the literature, up to 46% of all SAH patients may suffer from IOH, which in some cases leads to permanent blindness. In addition to SAH, TS can also be associated with traumatic brain injury (TBI) and ICH. Only a few prospective studies have been published on this condition. Less in the context of TS and ICH and TS and TBI. In our case, IOH was seen accompanying non-traumatic ICH.

TS is associated with a high mortality of up to 90% in SAH patients [4]. Currently, low GCS, high Hunt and Hess ratings, and high Fisher scale scores have been associated with a higher incidence of TS in large prospective studies. Frizzel et al. [5] reported that 8 patients with vitreous hemorrhage had a poor clinical course with transient or prolonged coma, and 89% of their patients had additional IOH.

Different pathophysiological mechanisms have been described for IOH. However, the widely accepted mechanism emerged with Manschot's experimental work in 1954 [6]. According to this mechanism, an abrupt increase in intracranial pressure (ICP) can cause rapid effusion of CSF from the optic nerve sheath to the periphery. As a result, dilatation of the retrobulbar portion of the optic nerve mechanically compresses the central retinal vein. Venous hypertension leads to venous stasis and subsequent rupture of the thin retinal vessels. A pattern of increase in ICP explains both the initial and delayed manifestations of ocular hemorrhage, as well as other pathologies with increased ICP that can lead to IOH [3]. Another accepted mechanism is the direct leak of SAH into the intraocular spaces [7].

Patients with TS should be evaluated in terms of radiological, ophthalmological, and neurosurgery and followed closely clinically. Demonstration of hyperdense bleeding products on CT and fundoscopic examination is diagnostically necessary. Ocular ultrasound examination can also be an effective tool to contribute to the diagnosis [8].

Conservative method is preferred primarily in the treatment. However, intraocular bleeding may persist in some patients. In these patients, an ophthalmological surgical intervention called pars plana vitrectomy is performed. Another emerging therapeutic option is intravitreal injection of tissue plasminogen activator or sulfur hexafluoride [9]. In addition, patients are followed closely with the ophthalmological examination. Elevating the head with bed rest, drinking plenty of fluids, and avoiding anticoagulant drugs may benefit patients. Generally, spontaneous resorption is expected to occur within a few months [2].

Conclusion

Intracranial compartments are primarily evaluated in the emergency radiology of brain CT and orbital pathologies may be overlooked. Studies have shown that mortality is significantly increased in patients with intraocular hemorrhage, also known as TS [4]. Therefore, radiologists should pay attention to IOH and state it in their reports.

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Thus, it is predicted that the prognosis will be better with rapid diagnosis and treatment.

Informed consent

Written informed consent was obtained from the patient for publication of this case and any accompanying images.

References

1. Fahmy JA. Vitreous haemorrhage in subarachnoid haemorrhage - Terson's syndrome: report of a case with macular degeneration as a complication. Acta Ophthalmologica 2009; 50:137–143.
2. Issiaka M, Mchachi A, Rachid R, Belhadji MEL, Mahazou I, Banao M. Terson syndrome: two case reports. International Journal of Surgery Case Reports 2022; 90:106700.
3. Czorlich P, Skevas C, Knospe V et al. Terson syndrome in subarachnoid hemorrhage, intracerebral hemorrhage, and traumatic brain injury. Neurosurg Rev 2015; 38:129–136.
4. Fountas KN, Kapsalaki EZ, Lee GP et al. Terson hemorrhage in patients suffering aneurysmal subarachnoid hemorrhage: predisposing factors and prognostic significance. JNS 2008; 109:439–444.
5. Frizzell RT, Morris R. Screening for ocular hemorrhages in patients with ruptured cerebral aneurysms: a prospective study of 99 patients. 1997; 41:6.
6. Manschot WA. Subarachnoid hemorrhage. American Journal of Ophthalmology 1954; 38:501–505.
7. Iuliano L, Fogliato G, Codenotti M. Intrasurgical imaging of subinternal limiting membrane blood diffusion in Terson syndrome. Case Reports in Ophthalmological Medicine 2014; 2014:1–3.
8. Czorlich P, Burkhardt T, Knospe V et al. Ocular ultrasound as an easy applicable tool for detection of Terson's syndrome after aneurysmal subarachnoid hemorrhage. PLoS ONE 2014; 9:e114907.
9. Kapoor S. Terson syndrome: an often overlooked complication of subarachnoid hemorrhage. World Neurosurgery 2014; 81:e4.

Case Report

Journal of Emergency Medicine Case Reports

Nech Horn Formation After Jugular Vein Catheterization for Haemodialysis: Case Report

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Abstract

Haemodialysis is an essential life-saving procedure for persons suffering from kidney failure. Haemodialysis is usually acheived by central venous catheterization. Neck hornformation is one of the most serious and seldom complications of the procedure. A 43-year-old man's right internal jugular vein was catheterized for haemodialysis after his arteriovenous fistula failed. The catheter puncture site produced a neck horn after removal. Surgery included horn resection and thrombus evacuation. Neck horn following an internal jugular catheter insertion might be dangerous if left untreated. The horn and thrombus are best removed surgically and treated with antibiotics.

Keywords: Jugular vein catheter, neck horn formation, chronic renal failure, haemodialysis

Introduction

This case study describes the development of a neck horn in a young man with chronic renal failure who was receiving haemodialysis via the right internal jugular vein catheter. Haemodialysis is a life-saving technique for individuals suffering from renal failure, but there are possible consequences that must be considered, as with many medical procedures. one of the most dangerous consequence of such internal jugular vein catherization is the growth of a neck horn, which, if left untreated, might lead to major health problems. This case report will contain a comprehensive assessment of the thsi complication, as well as medical advice and suggestions for the best course of action.

Case Report

A 43-year-old male patient with chronic renal failure has been receiving hemodialysis through a left radiocephalic arterovenous fistula for the past 5 years. The fistula had been sealed off due to thrombosis. The patient had a new fistula created in the right upper extremity, and a hemodialysis catheter was inserted into the right internal jugular vein to be used until the new fistula was ready to be used. Since the area on the right side of the neck where the catheter had been implanted had become bloated, red, and painful following the initial implantation of the catheter, the nephrologist withdrew the catheter and inserted a new one through the right femoral vein one week later. Three more weeks passed before the patient started complaining of a horn-like growth on the right side of their neck. There was a 3.5 cm long, firm, painful, crimson horn at the site where the catheter was inserted. There was a dried-out black spot near the tip of the horn. CT scanning revealed thrombosis in a venous sinus (Figure 1).

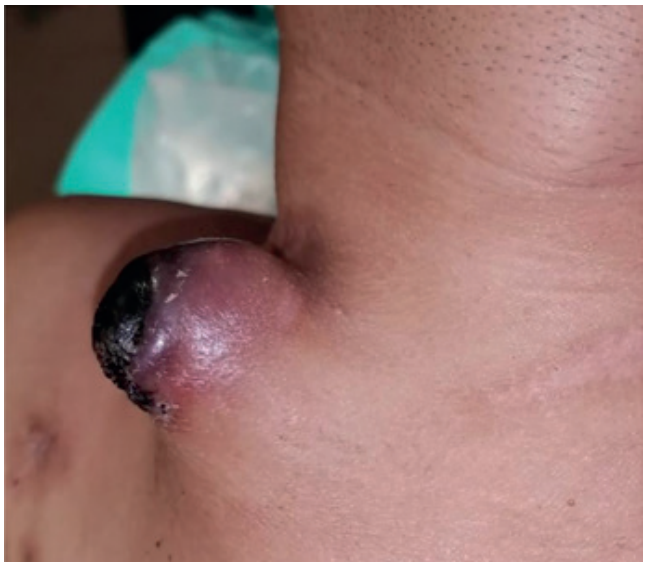

Figure 1.

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Under general anesthesia, a transverse incision was made in the horn's bottom board following completion of all preoperative preparations. All thrombi were eliminated with success. A jugular vein had been severed, but there were no visible signs of hemorrhage intra-and postoperatively. The thrombus was successfully removed, and the lesion was appropriately closed.

The patient was observed in the hospital ward for two days before being discharged without incident or complaint.

Discussion

Neck Hornformation, also known as Pseudoaneurysm, which is a vascular complication that can develop during jugular vein catheterization for hemodialysis [1]. Neck Hornformation occurs when the arterial wall is compromised, allowing blood to escape and accumulate in the surrounding tissue. [2]. This may lead to severe complications, including pain, swelling, localized infection, hemorrhage, and even nerve injury [3-5]. It is essential to closely watch individuals undergoing catheterization, and if any indications of Neck Hornformation appear, quick medical attention should be sought.

Initial symptoms include a nodule, erythema, and discomfort at or along the catheter site. If these symptoms are present, anti-inflammatory drugs, tepid compresses, and gentle massage may be prescribed. In extreme cases, catheter removal may be necessary [6].

In situations of developing horn, surgical surgery including excision of the horn and evacuation of the accumulated thrombus may be the most effective approach of treatment.

In our situation, antibiotics and anti-inflammatory medications had been administered. When preparing the patient for surgery, we were concerned about the possibility of active bleeding after thrombus removal. Therefore, blood preparation was performed, and the patient was placed under general anesthesia so that, in the event of active hemorrhage, we can prolong the incision until we reach the internal jugular vein or the other surrounding structures that may be implicated.

Fortunately, there was no active bleeding, and the procedure proceeded without incident.

Conclusion

The development of neck horn afterinsertion of an internal jugular catheter is a major problem if not effectively managed. Antibiotics and surgical excision of the horn with evacuation of the thrombus are the most successful therapies.

References

1. Wang M, Yimin W, Qin X, Xu Y, Li W, Li P, et al. Neck Hornformation after Jugular Venous Catheterization for Hemodialysis: A Rare Complication. Annals of Vascular Surgery, 2019,54, 287-290. doi:10.1016/j.avsg.2018.05.026
2. Abdalrhaman YM, Ahmed HS, Rahim MA, Ashry AM. Pseudoaneurysm in a patient with a long-term vascular access: potential dangers of jugular catheterization. BMJ Case Reports, bcr-2018-225921. doi:10.1136/bcr-2018-225921
3. Chow K, Chun-Kit N, Patankar R. Necks Hornformation Following Jugular Vein Cantharization for Hemodialysis: A Rare Complication. Cardiovascular & therapeutic interventions, 2018.9(1), e71–e74. doi: 10.1111/j.1755-5922.2017.00346.x.
4. Nayeemuddin M, Pherwani AD, Asquith JR. Imaging and management of complications of central venous catheters. Clin Radiol 2013.68(5):529–544
5. Bream Jr, P. R. Update on insertion and complications of central venous catheters for hemodialysis. In Seminars in interventional radiology. Thieme Medical Publishers. 2016. Vol. 33, No. 01, pp. 031-038.
6. Chaves Monica M, et al. Update and Problems in Hemodialysis and Home Care Access. Therapeutic Apheresis and Dialysis. vol. 16, no. 6, 2012, pp. 559–567., doi:10.1111/j.1744-9987.2012.01128.x

Case Report

Journal of Emergency Medicine Case Reports

Lifesaving Maneuver In Full Airway Obstruction Caused By Foreign Body Aspiration: Pushing The Foreign Body To The Right Main Bronchus

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Abstract

Foreign body aspiration (FBA) is one of the leading causes of accidental death in children. Patients with severe respiratory failure and upper airway obstruction who need resuscitation due to FBA, admit to emergency services. In this case report, we present a 22-month-old male patient who admitted to the pediatric emergency department due to foreign body aspiration, whose oxygen saturation increased by providing unilateral lung ventilation by pushing the foreign body from the subglottic area into the right bronchus during intubation to obtain advanced airway.

Keywords: Foreign body, aspiration

Introduction

Foreign body aspiration (FBA) is a life-threatening emergency that is most common in children younger than 5 years of age (1). It is one of the leading causes of accidental death in children. FBA patients may present with signs of acute respiratory failure as well as simple, non-specific respiratory symptoms. This makes it difficult to recognise in some cases (2). In this article, we present a case of a patient who presented to the emergency department with a complete airway obstruction, whose respiratory failure was resolved by pushing the foreign body into the right main bronchus during endotracheal intubation.

Case Report

A 22-month-old male patient was brought to the emergency room due to sudden onset of respiratory distress, cough and cyanosis while eating chestnuts at home. The patient's family tried to remove the foreign body by applying back blow, but it was unsuccessful. The vital signs at the moment of admission to the emergency room were unstable. Oxygen saturation was 40%, respiratory rate was 70/min, heart rate was 150/min, blood pressure was 100/65 mmHg, and he was lethargic. On physical examination, he had stridor and cyanosis. The respiratory sounds were decreased on both lungs on auscultation and the patient had subcostal and suprasternal retractions which showed severe respiratory distress. Although 10-15 liters/minute oxygen was administered with a reservoired oxygen mask, the oxygen saturation did not increase. In Blood gas analyze, the values were: pH: 7.23 pCO2: 67 mmHg pO2: 50 mmHg hco3: 19 mEq/L. Given the sudden development of the event, history of foreign body aspiration and the patient's poor general condition, an emergency endotracheal intubation was decided in order to provide an advanced airway even before obtaining a chest X-ray image. While intubation, the foreign body has seen at the entrance of the subglottic area and it was tried to be removed with the help of a magill forceps. However it could not be removed. To ensure airway patency, the foreign body was pushed into the right main bronchus with the endotracheal tube and endotracheal intubation was performed. After the airway was ensured, the patient's oxygen saturation increased to 88%. In the postero-anterior chest X-ray image taken after endotracheal intubation; it was observed that there was complete atelectasis in the left lung and intubation was selective in the right bronchus (Figure 1). The endotracheal tube has retracted slightly, and oxygen saturation increased to 93%, however another X-ray couldn't managed to be performed before the patient's

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referral. Post-intubation blood gas values were: pH: 7.34 pCO2: 45 mmHG p02: 70 mmHG hco3: 23 mEq/L. After that manuever, the patient was referred to a center in which there was a pediatric surgery department who could perform bronchoscopy. The patient was transferred successfully, intubated.

A giant piece of chestnut was seen at the entrance of the right main bronchus in the pediatric bronchoscope performed by the pediatric surgeon. The foreign body was removed with the help of forceps in 2 pieces. After the secretions were aspirated, the right main bronchus branches were clearly seen distally. No foreign body was found in the examination performed on the left bronchus. It was observed that there was no difference in aeration and no pneumothorax in PA chest X-ray image after bronchoscopy (figure 2). After the procedure, the patient was intubated and taken to the pediatric intensive care unit. He was extubated after one day of intubation. No anoxic or hypoxic findings were detected. Hoarseness persisted for one week. It was evaluated as transient stridor due to bronchoscopy. The total hospitalization period was 5 days and the patient was discharged in a healthy condition without any complications.

Discussion

The diagnosis of FBA can be made according to the symptoms, clinical and radiological findings, and clinical suspicion. Patients typically present with a history of sudden onset of cough and respiratory distress while eating or playing with toys (3). Foreign bodies are more likely to fall into the right lung and lower lobe, but coughing and changes in body position can cause foreign bodies to change position in the trachea (4).

In a study conducted in Turkey, it was observed that the most frequently aspirated foods were peanuts, followed by sunflower seeds (3) and hazelnut and sunflower seeds in another study (5). When the foreign body has a large diameter, it is more likely to obstruct the upper airway, such as the trachea. In upper airway obstruction, symptoms present with signs of suffocation soon after aspiration. In such a case, first aid maneuvers against the foreign body must be applied quickly. If the diameter of the foreign body is smaller, it is more likely to cause obstruction in the lower lung and inclined parts of the bronchial tree. In such a situation, the most common symptoms and signs are cough, localized wheezing, and uneven breath sounds (6).

The case discussed in this article, presented with cough, which is one of the the most common presenting symptoms in the literature (3). In the literature, the most common physical examination finding in FBA patients was reported as unilateral decrease in breath sounds (1, 3, 4). In our case, respiratory sounds could not be obtained bilaterally because the foreign body was in the trachea causing a complete airway obstruction.

Findings such as atelectasis and aeration difference due to radiolucent foreign bodies may be detected on the chest X-ray, or no findings may be detected (3, 4). In our case, atelectasis was observed after intubation due to right selective intubation.

FBA can lead to partial or complete airway obstruction, resulting in pneumonia, anoxic brain injury, bronchiectasis or death (7). Complications may be due to delays in diagnosis, and it is thought that most of them would not have occurred if physicians had trusted the history (7). In our case, intubation was decided without X-ray in line with the history given and asphyxia and serious complications were prevented.

The definitive diagnosis of FBA can only be made by flexible or rigid bronchoscopy (8). Rigid bronchoscopy has been shown to be safe in children after FBA (7, 8). Children may die before, during and after bronchoscopy (9). Although asphyxia on admission or initial emergency bronchoscopy may cause some deaths, hypoxic cardiac arrest and bronchial rupture during object removal account for the majority of in-hospital deaths (9).

In upper airway obstruction patients who apply to the emergency department with severe respiratory failure due to FBA and require resuscitation, pushing the objects from the trachea into the bronchi during the intubation can be life-saving, even if unilaterally. Our case, who had bilateral low aeration in the lungs and severe desaturation at the time of admission, and whose saturation value returned to normal with unilateral aeration by pushing the foreign body into the right main bronchus, supports this proposition.

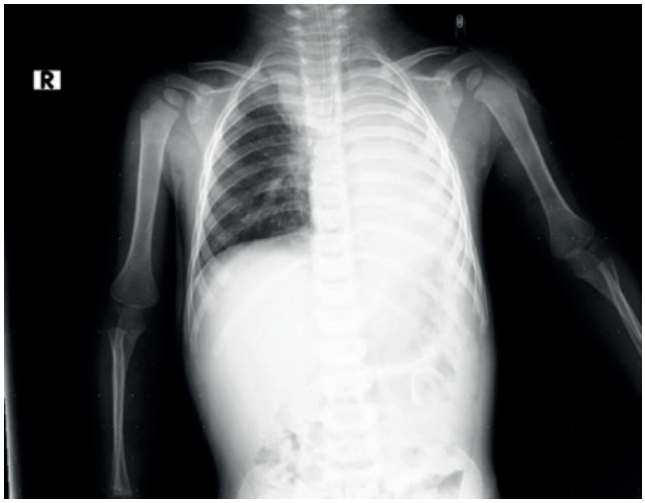

Figure 1. Left lung atelectasis after right selective intubation after the foreign body was pushed into the bronchi

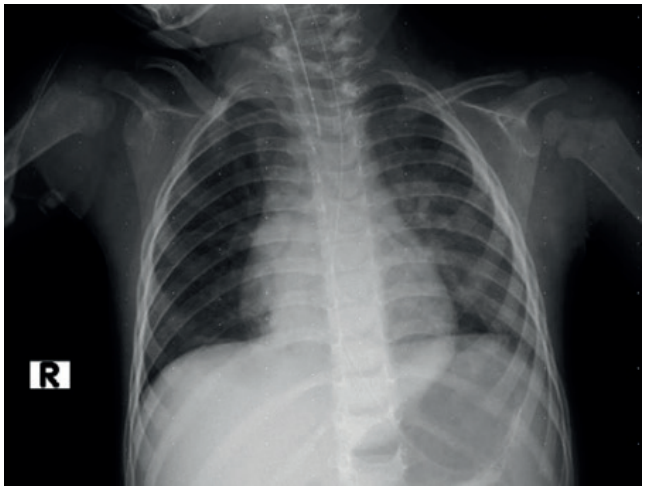

Figure 2. Posterior anterior chest X-ray after bronchoscopy

References

1. Lee JJ, Philteos J, Levin M, Namavarian A, Propst EJ, Wolter NE. Clinical prediction models for suspected pediatric foreign body aspiration: a systematic review and meta-analysis. JAMA Otolaryngology–Head & Neck Surgery. 2021;147(9):787-96.
2. Xavier SD, Filho IB, de Carvalho JM, de Souza Framil VM, Castro TMPPG. The first eletrocnic Journal of Otolaryngology in the world. 2007.
3. Aslan N, Yıldızdaş D, Özden Ö, Yöntem A, Horoz ÖÖ, Kılıç S. Evaluation of foreign body aspiration cases in our pediatric intensive care unit: Single-center experience. Turkish Archives of Pediatrics/Türk Pediatri Arşivi. 2019;54(1):44.
4. Liu B, Ding F, An Y, Li Y, Pan Z, Wang G, et al. Occult foreign body aspirations in pediatric patients: 20-years of experience. BMC Pulmonary Medicine. 2020;20:1-6.
5. Erikçi V. Foreign body aspiration: a four-years experience. 2003.
6. Sahadan DZ, Zainudin NM, Kassim A, Zahari Z, Mahadzir M, Daud C, et al. Case series of foreign body aspiration in Paediatric Institute, Hospital Kuala Lumpur. The Medical Journal of Malaysia. 2011;66(5):484-6.
7. Cataneo AJM, Cataneo DC, Ruiz RL. Management of tracheobronchial foreign body in children. Pediatric surgery international. 2008;24:151-6.
8. Ayed AK, Jafar AM, Owayed A. Foreign body aspiration in children: diagnosis and treatment. Pediatric surgery international. 2003;19:485-8.
9. Brkic F, Umihanic S, Altumbabic H, Ramas A, Salkic A, Umihanic S, et al. Death as a consequence of foreign body aspiration in children. Medical Archives. 2018;72(3):220.