

A dangerous joke: Colon perforation by an air compressor

Erkan Hazar¹, Afsin Emre Kayipmaz^{2*}, Abuzer Coskun³, Sedat Ozbay³, Osman Mahir Okur³, Ilham Ozkan³, Sevki Hakan Eren⁴, Cemil Kavalci²

Abstract

Objectives: The most dangerous complication of air entry into rectum at a high volume and velocity in a short time are sigmoid colon rupture and pneumoperitoneum

Case: We present a 28-year-old male was brought to emergency with abdominal nausea, vomiting, pain, and abdominal swelling for 4 hours. Based on physical examination and laboratory data the patient was taken to operating theatre for suspected acute appendicitis. On exploration an excessive amount of gas distention was observed in whole colon with caecum being more distended. There were serosal linear defects that were bleeding, with the largest being 3-4 cm, mainly in rectum. Larger defects were primarily closed. A more detailed patient history was taken and it was found out that he was pumped high-pressure air by an air compressor into his anus while joking with his friends.

Conclusion: Air compressor abuse is one of the non-iatrogenic causes of barotrauma to colon. It usually occurs while working mates are joking with each other. In the rare cases where the cause of acute abdomen remains unclear it would be prudent to question the trauma history and use of an air compressor

Key words: Air compressor, Colon perforation, Emergency

Introduction

Colonic barotraumas are caused by pressure increase inside the intestinal lumen (1). The two probable result of colonic barotrauma are colonic mucosal injury and colon perforation (2). The most dangerous complication of air entry into rectum at a high volume and velocity in a short time are sigmoid colon rupture and pneumoperitoneum (3). In this paper we discussed a rare case colonic perforation that was caused by an air compressor.

Case

A 28-year-old male was brought to emergency with abdominal nausea, vomiting, pain, and abdominal swelling for 4 hours. Abdominal examination revealed a diffuse tenderness on palpation, guarding, and rebound tenderness that was more prominent at the right lower quadrant. Based on physical examination and laboratory data the patient was taken to operating theatre for suspected acute appendicitis. A Mc-Burney laparotomy was made under general anesthesia. On exploration appendix appeared normal whereas there was approximately 300 cc blood in the abdominal cavity and thus a midline incision was done. On exploration an excessive amount of gas distention was observed in whole colon with cecum being more distended.

There were serosal linear defects that were bleeding, with the largest being 3-4 cm, mainly in rectum and also in sigmoid colon, descending colon, and transverse colon (Figure 1). Larger defects were primarily closed, abdominal cavity was irrigated, a drainage catheter was placed in Douglas pouch, and the cavity was closed. A more detailed patient history was taken after the patient was woke up and it was found out that he was pumped high-pressure air by an air compressor into his anus while joking with her friends

Discussion

Colonic trauma due to iatrogenic high-pressure air flow most commonly occurs during colonoscopy (2). Woltjen reported a caecal perforation count of 4 among 3000 colonoscopy procedures (4). Since cecum is the widest portion of colon, it is the most commonly and severely affected part of colon in colonoscopy (4-7).

Air compressor abuse is one of the non-iatrogenic causes of barotrauma to colon. Air compressors are generally used in various industrial fields, factories, and cleaning machines.

Their unsuitable and unconscious use may lead to serious consequences such as colonic perforation. It usually occurs while working mates are joking with each other (3, 7). Our patient's history was similar to the literature.

There are some cases in the literature that were managed by primary closure and loop colostomy (7, 8). Our case was also managed by primary closure and abdominal drainage. Air compressor abuse usually causes perforation of rectosigmoid colon while cecum is most commonly affected site in colonoscopy (2). Since the rectosigmoid region has a limited mobility than other segments, it is more susceptible to barotrauma (7). Our patient had also transverse colon lesions in addition to rectum and sigmoid colon segments. With respect to the trauma site, our case was similar to other previous reports.

The diagnosis of this condition is not very difficult to make when patient reveal their history of air compressor-induced injury. In some instances when history cannot be taken or verified, a trauma history and the profession of the patient should be questioned (2). Intraoperative free air on direct X-ray or computed tomography (CT) may suggest colonic perforation. Our patient was taken into operation with suspected acute appendicitis without X-ray and CT examinations. Primary repair or segmentary resection is the recommended approaches in the treatment of colonic perforations (8). Hence, our patient was treated by primary suturing of the defects and resection was not required since he had colonic perforation and he applied earlier at the course. He experienced no complications after the surgery.

In conclusion, one of the rare causes of colonic barotrauma is the exposure to an air compressor. Patients presenting with such an exposure are reluctant to give an accurate history due to social, religious, or psychological reasons. In the rare cases where the cause of acute abdomen remains unclear it would be prudent to question the trauma history and use of an air compressor. Exposure to an air compressor should be remembered as a possible cause of acute abdomen.

Conflict of Interest: The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.



Figure 1. Serosal linear defects

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