



Colostomy complications in childhood: Analysis of 84 patients

Çocuklukta kolostomi komplikasyonları: 84 hastanın analizi

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Abstract

Introduction: Colostomies play a vital role in the surgery of congenital and acquired gastrointestinal system pathologies. Despite improvements in surgical approaches, surgical morbidity and complication rates are still high. The incidence of complications after colostomy is reported in the literature between 10% to 74%.

Methods: Eighty-four patients who underwent colostomy due to congenital and acquired pathologies in pediatric surgery clinics of Van Yuzuncuuyıl University and Van Regional Education and Research Hospital were evaluated retrospectively. Patients were compared in terms of risk factors, urgency status, reasons for opening colostomy, location of opening area in abdomen wall, types and complications.

Results: 84 patients were found to have colostomy for different reasons. 52 of the patients were male and 42 were female. The most frequent anorectal malformations and Hirschsprung's disease revealed colostomy. Complications related to colostomy were found in 72% of the cases. A total of 14 patients underwent colostomy revision. The most common complication was stomal dermatitis with 67% and colostomy prolapse with 16%.

Discussion and Conclusion: Surgical technique errors and lack of care increase the morbidity by affecting the comfort of the patient. Prophylactic care and awareness of complications will reduce morbidity and mortality.

Keywords: Colostomy; complication; pediatrics.

When the intestinal continuity can not be provided, temporarily or permanently colostomy can be considered as a option and it is frequently used in the practice of pediatric surgery. Colostomy plays a vital role in the surgery of congenital and acquired gastrointestinal tract pathologies in neonates

Özet

Amaç: Kolostomiler; konjenital ve edinsel gastrointestinal sistem patolojilerinde hayati bir rol oynamaktadır. Cerrahi yaklaşımlardaki gelişmelere rağmen, cerrahi morbidite ve komplikasyon oranları hala yüksektir. Kolostomi açılma sonrası komplikasyon insidansı literatürde % 10 ile % 74 arasında bildirilmiştir.

Gereç ve Yöntem: Van Yuzuncuuyıl Üniversitesi ve Van Bölge Eğitim ve Araştırma Hastanesi Çocuk Cerrahisi Kliniği'nde doğumsal ve edinsel patolojilere bağlı kolostomi açılan 84 hasta retrospektif olarak incelendi. Hastalar risk faktörleri, aciliyet durumu, kolostomi açılma nedenleri, karın duvarındaki açılma bölgesinin yeri, tipleri ve komplikasyonları açısından karşılaştırıldı.

Bulgular: 84 olguya farklı nedenlerle kolostomi açıldığı saptandı. Hastaların 52'si erkek, 42'si kadındı. En sık anorektal malformasyonlar ve Hirschsprung hastalığı nedeniyle kolostomi açıldı. Olguların % 72'sinde kolostomi ile ilgili komplikasyonlar saptandı. Toplam 14 hastaya kolostomi revizyonu yapıldı. En sık görülen komplikasyon % 67 ile stomal dermatit ve % 16 ile kolostomi prolapsusudur.

Sonuç: Cerrahi teknik hataları ve bakımsızlık, hastanın konforunu etkileyerek morbiditeyi arttırmaktadır. Profilaktik bakım ve komplikasyonların bilinmesi morbidite ve mortaliteyi azaltacaktır.

Anahtar Sözcükler: Kolostomi; komplikasyon; pediatri.

and children.^[1,2] Colostomy is usually performed in urgent conditions in pediatric population. Despite improvements in surgical methods, surgical morbidity and complication rates are still high.^[3] The incidence of complications after colostomy is reported to be between 10% to 74%.^[2,3]



In this study; complications of childhood colostomies and treatment methods of these complications were evaluated with guidance of the literature.

Materials and Method

From March 2010 to May 2018, patients with colostomy due to congenital and acquired pathologies in pediatric surgery clinic in Van Yuzuncuyil University and Van Regional Education and Research Hospital were retrospectively reviewed. Patients with complete records were included to study. Patients were evaluated for risk factors, urgency status, reasons for opening colostomy, location of opening, types and complications. The mean follow-up period of the patients was 18 months (4–24 months). Statistical analysis was performed with the Kruskal Wallis and Mann Whitney U-test methods in the SPSS (Statistical Package for Social Sciences) Windows 15.0 program. $p < 0.05$ was considered statistically significant.

Results

Colostomy was performed in 84 patients for different reasons. 52 of the patients were female and 42 were male. Mean age was 4 months (0–14 years). 14 patients underwent colostomy revision.

The complications that developed within the first 3 months were classified as early colostomy complications and those developed after 3 months were classified as late colostomy complications (Table 1).

Complications were classified as early and late. Early complications; i) ischemia and intestinal necrosis, ii) stomal retraction, ii) parastomal infection, iii) parastomal dermatitis, iiiii) mucosal bleeding. Late complications; i) adhesions, ii) parastomal hernia, and iii) stomal prolapsus (Table 2).

105 colostomy complications were detected in 84 patients. Colostomy complication developed in 72% of the patients. This high rate was attributed to the fact that the colostomies were performed in urgent conditions during the neonatal period with the long duration of the colostomy closure interval. Six patients died due to congenital heart diseases and sepsis. The most frequently anorectal malformations and Hirschsprung's disease revealed colostomy. Complications related to colostomy were found in 72% of the cases. A total of 14 patients underwent colostomy revision. The most common complication was stomal dermatitis with 67% (Figure 1) and colostomy prolapsus (Figure 2) with 16%.

Discussion

Colostomy can be performed in children for congenital and acquired reasons in clinical practice.^[1,2] It is used as a life-saving procedure and often as a first-step surgery.^[2-4] Colostomies are frequently performed in emergencies due to ARM, HD, NEC and complicated colonic atresia.^[2,3] In HD and ARM, colostomy is opened as the initial surgical step but life saving in trauma,

Table 1. Primary disease of patients with colostomies

Primary disease	n(%)
ARM	36
Intestinal Atresia	5
Hirschsprung Disease	22
Nontraumatic Acute Abdomen (Volvulus, Intussusception, NEC)	16
Trauma	3
	2

Table 2. Classification of colostomy complications

Early complications	Patients
Mucosal bleeding	12
Retraction of stoma	7
Ischemia and necrosis of colostomy	1
Parastomal infection-mucocutaneous decomposition	4
Peristomal dermatitis	56
Evisceration	4
Late complications	
Parastomal hernia	5
Prolapse	14
Stomal obstruction	2



Figure 1. Stomal dermatitis.

perineal burn, chronic infection and malign diseases.^[3]

Morbidity is often more common in HD and ARM patients than in other conditions.^[4-6] This can be attributed to the fact that the colostomy is opened in these patients in emergency conditions during the neonatal period and the colostomy closure interval is longer than the other pathologies.^[2] In our cases complications were more common in colostomies which are



Figure 2. Inflamed colostomy prolapse.

performed due to ARM.

Complications of colostomy are reported at 28–74%.^[2,3,6] In our study this rate is about 72%. The main determinant of colostomy complications are primary disease and type of the colostomy.^[2,7,8]

In the past, transverse and sigmoid loop colostomy was the most common ones. Loop colostomies are easy and have a short operation time but have higher morbidity and complication rates than divided colostomies.^[2,3,6] We found that the split colostomies were more useful than the loop colostomies in accordance of the literature, and the complication rates were lower. The most important factor in preventing colostomy complications is early colostomy closure.^[6]

Stomal dermatitis is the most commonly reported colostomy complication in the literature as it is in our cases.^[1,3,9] stomal dermatitis is a condition that affects the comfort of life, but can be life threatened when it is complicated by infection and evisceration.^[10] In terms of prevention, colostomy paste, zinc and antifungal creams have been used, and according to our experience, treatment of dermatitis after stomal inflammation is quite hard. For this reason, we think that the wound site should be cleaned and dried frequently before skin inflammation occurs to protect against stomal dermatitis. Mucocutaneous dissociation was seen in 4 patients. It would be useful to plan the colostomy lines away from the other sutures in order to prevent the evisceration of the suture lines due to stomal dermatitis and gaita transmission.

Prolapsus is the most common complication after stomal dermatitis and can usually be treated conservatively, but in some patients it may be life-threatening and may require revision.^[2,3,6] Surgical techniques such as like skin-bridge, subcutaneous tunnel for bowel exit, pursestring sutures at the fascial level, and an anchoring stitch have been reported to prevent

prolapse formation.^[2] Divided colostomy can reduce prolapsus rates but does prevented certainly.^[2,3] Prolapsus is more common in transverse colostomies and loop colostomies.^[2,6] Pena reports that prolapsus is seen more frequently in colostomies around the mobile colon segment.^[9,11,12] In our clinic, prolapsus cases are usually treated conservatively. inflammation and fibrosis occur in the prolapsed intestine, which leads to severe intestinal loss in the colostomy closure surgery. according to our experience; the use of the immobilized intestinal segment in colostomy construction and the like skin-bridge method may reduce prolapsus rates.

Stomal obstruction is reported around 0.7–6.3%.^[2,6,12,13] It depends on technical problems. Dilatation is usually therapeutic.^[2] 2.9% of patients require revision.

Mucosal bleeding is reported at 0–10.3%.^[2,3] Our cases were detected at around 14%. Newborns may tendency to bleed due to lack of vitamin K. It is known that they can usually be stopped by pressure.

Stoma retraction is reported at 8.35 to 17%.^[1,12,13] Our cases were detected at around 8%. Although it is usually followed conservatively, the need for revision may arise if stomal obstruction occurs.^[1,6] In our 2 cases we needed revision due to stomal obstruction.

We identified stoma necrosis in a patient with colostomy due to NEC, which was associated with ischemia and continued inflammation. After colostomy revision, patient was lost due to prematurity, sepsis and shock. Parastomal hernia was seen in 5 patients (6%). They were usually followed up conservatively and closure of colostomy was sufficient for treatment.

Mortality is often associated with primary disease, prematurity, low birth weight and sepsis.^[3,4,13] Low birth weight is the most important cause of mortality in newborn colostomies.^[4,12] In our cases mortality was seen in premature and low birth weight neonates with congenital heart disease consistent with the literature.

Conclusion

Complications were frequently detected in colostomies performed during the neonatal period. Surgical technic errors and lack of care increase the morbidity by affecting the comfort of the patient. Prophylactic care and awareness of complications will reduce morbidity and mortality rates.

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