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Infant Appendicitis with Perforation: a case report

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Pro-inflammatory cytokine (IL-6) and total count lymphocyte profiles in COVID-19 patients with different severity levels	
Shinta Dewi Permata Sari, Wening Tri Mawanti, Erlin Listiyaningsih, Rizkyana Avissa, Rini Latifah, Wawang S Sukarya	218225
Predictive factors for recurrence in patients with Graves' Disease following treatment with methimazole	
Mohammad Robikhul Ikhsan, Raden Bowo Pramono, Hemi Sinorita, Vina Yanti Susanti	226-231
Prevalence of hypertension and its risk factors among obese adolescents in Yogyakarta, Indonesia	
Neti Nurani, Navilah Hidayati, Retno Palupi-Baroto, Delvira Anggraini, Nurkharisma Kusumawardani	232-240
Prostate cancer profile in Dr. Sardjito General Yogyakarta	
Yurisal Akhmad Dany, Ahmad Zulfan Hendri, Indrawarman Soerohardjo	241-246
Resistin associated with higher cardiovascular events in intermediate grace score of acute coronary syndrome	
Rizki Amalia Gumilang, Nahar Taufiq, Budi Yuli Setianto	247-256
Risk factors of sensory hearing loss in nasopharyngeal carcinoma patients obtaining conventional radiotherapy	
Odhi Anggani, Sagung RaiIndrasari, Feri Trihandoko, Anisa Haqul Khoiria, Ashadi Prasetyo	257-263
Complication of trans-rectal prostate biopsy based on Clavien index: 5 years of experience	
Adhitya Fajar Prasetya, Johan Renaldo	264-273
Centella asiatica: alternative dry skin therapy in type 2 diabetes mellitus	
Lili Legiawati	274-289
Exercise as part of anxiety coping management in the Covid-19 pandemic era	
Denny Agusningsih, Rakhmat Ari Wibowo	290-300
Infant appendicitis with perforation: a case report	
Fuad Adi, Ekvan Danang, Supangat	307-310
Congenital cystic adenomatoid malformation: a case report	
Haryo Aribowo, Divva Aurelia, Ghifari Farandi	311-318

J Med Sci	Volume 53	Number 03	Page 218-318	Yogyakarta July 2021	Accredited by Dirjen Dikti Number: 36/E/KPT/2019
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Table of Contents

Articles

Pro-inflammatory cytokine (IL-6) and total count lymphocyte profiles in COVID-19 patients with different severity levels	
 <i>Shinta Dewi Permata Sari, Wening Tri Mawanti, Dewi Martalena, Erlin Listiyaningsih, Rizkyana Avissa, Rini Latifah, Wawang S Sukarya</i>	
 10.19106/JMedSci005303202101  Abstract views : 203  views : 255	
Predictive factors for recurrence in patients with Graves' Disease following treatment with methimazole	
 <i>Mohammad Robikhul Ikhsan, Raden Bowo Pramono, Hemi Sinorita, Vina Yanti Susanti</i>	
 10.19106/JMedSci005303202102  Abstract views : 85  views : 136	
Prevalence of hypertension and its risk factors among obese adolescents in Yogyakarta, Indonesia	
 <i>Neti Nurani, Navilah Hidayati, Delvira Angraini, Nurkharisma Kusumawardani, Retno Palupi-Baroto</i>	
 10.19106/JMedSci005303202103  Abstract views : 52  views : 82	
Prostate cancer profile in Dr. Sardjito General Yogyakarta	
 <i>Yurisal Akhmad Dany, Ahmad Zulfan Hendri, Indrawarman Soerohardjo</i>	
 10.19106/JMedSci005303202104  Abstract views : 19  views : 36	
Resistin associated with higher cardiovascular events in intermediate grace score of acute coronary syndrome	
 <i>Rizki Amalia Gumilang, Nahar Taufiq, Budi Yuli Setianto</i>	
 10.19106/JMedSci005303202105  Abstract views : 240  views : 153	
Risk factors of sensory hearing loss in nasopharyngeal carcinoma patients obtaining conventional radiotherapy	
 <i>Odhi Anggani, Sagung Rai Indrasari, Feri Trihandoko, Anisa Haqul Khoirria, Ashadi Prasetyo</i>	
 10.19106/JMedSci005303202106  Abstract views : 84  views : 138	
Complication of trans-rectal prostate biopsy based on Clavien index: 5 years of experience	
 <i>Adhitya Fajar Prasetya, Johan Renaldo</i>	
 10.19106/JMedSci005303202107  Abstract views : 100  views : 153	
Centella asiatica : alternative dry skin therapy in type 2 diabetes mellitus	
 <i>Lili Legiawati</i>	
 10.19106/JMedSci005303202108  Abstract views : 120  views : 167	
Exercise as part of anxiety coping management in the Covid-19 pandemic era	
 <i>Denny Agustiningsih, Rakhmat Ari Wibowo</i>	
 10.19106/JMedSci005303202109  Abstract views : 496  views : 369	
Infant appendicitis with perforation: a case report	
 <i>Fuad Adi Prasetyo, Ekvan Danang Setya, Supangat Supangat</i>	
 10.19106/JMedSci005303202110  Abstract views : 80  views : 180	
Congenital cystic adenomatoid malformation: a case report	
 <i>Haryo Aribowo, Divva Aurelia Azhalisita Amelinda, Ghifari Farandhi</i>	
 10.19106/JMedSci005303202111  Abstract views : 206  views : 217	



Infant appendicitis with perforation: a case report

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ABSTRACT

Submitted: 2020-05-11

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Appendicitis is one of the most common surgical emergencies in children. In the USA, there are 70,000 cases are diagnosed each year. Acute appendicitis is a rare case, barely considered in the diagnoses, and probably causes acute abdominal sepsis in neonates. It affects males generally 75% of the time and 25%-50% of all reported cases occur in premature infant. Almost 50 cases have been reported over the last 30 years. We reported a 5 month-old baby girl whom transferred to our hospital from a peripheral hospital. Previously, the baby diagnosis was low-type obstruction. At the time of admission to our hospital, the baby presented with a history of abdominal distension and did not pass stools after 48 h. Oxygen and oral gastric tube were administered. Exploratory laparotomy surgery was performed through a transverse incision. This report is a retrospective review of one patient with appendicitis perforation presented in our hospital.

ABSTRAK

Apendisitis adalah salah satu keadaan darurat bedah paling umum pada anak-anak. Di AS ada 70.000 kasus didiagnosis apendisitis setiap tahun. Apendisitis akut adalah kasus yang jarang, hampir tidak dipertimbangkan dalam diagnosis, dan mungkin menyebabkan sepsis pada neonatus. Sebesar 75% apendisitis umumnya terjadi pada laki-laki dan 25 - 50% dari semua kasus yang dilaporkan pada bayi prematur. Hampir 50 kasus telah dilaporkan selama 30 tahun terakhir. Kami melaporkan bayi perempuan berumur 5 bulan dipindahkan ke rumah sakit kami dari rumah sakit perifer. Sebelumnya, bayi didiagnosis obstruksi tipe rendah. Pada saat masuk ke rumah sakit, bayi memiliki riwayat perut kembung dan tidak buang air besar setelah 48 jam. Oksigen dan *oral gastric tube* diberikan. Operasi eksplorasi laparotomi dilakukan melalui sayatan tranversal. Laporan ini adalah tinjauan retrospektif dari satu pasien dengan perforasi apendisitis yang disajikan di rumah sakit kami.

Keywords:

appendicitis;
perforation;
surgery;
infant;
laparotomy;

INTRODUCTION

Appendicitis is one of the most common surgical emergencies in children. In the USA, there are 70,000 cases are diagnosed each year. The risk of appendicitis-related deaths in boys around 9% and in girls 7%.¹ Acute appendicitis rarely causes acute abdominal sepsis in neonates and is hardly considered in the differential diagnoses. It was recorded that as much

as 0.04-0.2% of the incidence of neonatal appendicitis has been reported.² The incidence in males is about 75% of the time, and 25%–50% of all reported cases occur in newborns.³⁻⁸ Over the last 30 years at least less than 50 cases have been reported,³ with a mortality rate ranging between 20% and 25%.^{2,5,7} Infant perforated appendicitis is a rare condition related to mortality and morbidity.⁹ Due to un-specific clinical presentation, late diagnosis well as

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surgical intervention delaying occurred in mostly neonatal appendicitis leading to high morbidity and mortality. As well as the rarity of neonatal appendicitis (NA), the lack of specific signs and a low index of suspicion have led to delays in diagnosis and surgical intervention.^{10,11} In most health care facilities, the diagnosis is generally made during laparotomy for intestinal perforation neonatal cases.¹² We reported here a baby girl whom diagnosed appendicitis with perforation.

CASE

A 5 month-old baby girl was transferred to our hospital from peripheral hospital. The baby was diagnosed with low-type obstruction by the peripheral hospital. The baby girl was born from a 46-year old primigravida at 33 weeks gestation by spontaneous

vaginal delivery with a birth weight of 2.5 kg. At the time of admission to our hospital, the baby girl presented with a history of abdominal distension and did not pass stools after 48 h. Oxygen and oral gastric tube were administered.

Abdominal X-ray result showed distended bowel and air-fluid level. A diagnosis of bowel obstruction was made. Emergency surgery was planned. Fluid, electrolytes, parenteral nutrition, and intravenous antibiotics were administered before the surgical intervention. Exploratory laparotomy was performed through a transverse incision. This surgical operation revealed appendicitis perforation and an appendectomy was performed. The baby girl had an uneventful post-operative recovery. At 3 days and one month postoperative examination, the baby was doing well.



FIGURE 1. Abdominal X-Ray exhibits air-fluid level and bloated bowel

DISCUSSION

A rare case, barely considered in

the diagnoses, and probably cause of acute abdominal sepsis in neonates is distinctive of acute appendicitis. The

symptoms of appendicitis can alter according to a child's age. In 2 years old toddler or younger, the most common symptoms are bloated or swollen abdomen followed by cramp and less vomiting.^{9,13} White blood cell count (WBC) and C-reactive protein (CRP) are generally used immediately upon acute appendicitis is suspected.¹⁴ More than 90% of children with acute appendicitis appear WBC above 10,000 and often left shift but not finding. In radiography with ultrasound imaging discover a non-compressible, and fluid-filled appendix with a diameter of more than 6 mm.¹

Single-dose antibiotic prophylaxis therapy considers being given preoperatively while the appendicitis diagnosis has been made. A second-generation cephalosporin against anaerobic bacteria or third-generation cephalosporin against partial anaerobic bacteria is mostly recommended besides the adjunct of metronidazole.¹ One of the most complications is perforated appendicitis instead, use a single dose and one regimen antibiotic, need "triple" antibiotic regimen (e.g. gentamycin, ampicillin, and metronidazole or clindamycin), or a combination (e.g. metronidazole/ceftriaxone or ticarcillin/clavulanate and gentamycin).¹³

The circumstance which contributes to a high mortality rate as a result of peritonitis and perforation is a flimsy appendicular wall and caecum that can't bloatedly incline to appendicular perforation in neonatal appendicitis. On the other hand, the underdeveloped and relatively meager size peritoneal space with the lower physiological reserve is a potential explanation of the swift spread of infection. In absence of conjecture of Hirschsprung's disease, the preferred line of management is simple appendectomy along with peritoneal lavage beside warm saline.¹ Because of these conditions, maintaining a high index of suspicion for appendicitis in neonates and infants presenting with

intra-abdominal sepsis of unclear etiology was highly recommended.¹⁵

CONCLUSION

Infant perforated appendicitis demands a vigorous clinical suspicion and remains to be a challenging diagnostic. This case emphasizes an unusual manifestation of infant appendicitis in which the radiological and clinical features were towards midgut volvulus. This profitably manages to emergency laparotomy which affirms the diagnosis. Good management will resolve the convenient result of treatment.

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