

## **A Rare Case: Intussusception In A 8½ -Month-Old-Girl With Intestinal Tuberculosis**

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### **ABSTRACT**

**Backgrounds** *Intestinal TB can be difficult to diagnose due to absence of a particular pattern of symptoms and signs. Definitive diagnosis is based primarily upon histology, Ziehl-Neelsen staining for acid-fast bacilli, and culture. Intussusceptions associated with intestinal TB has been poorly documented in children.*

**Case MA**, 8 ½ -month-old girl, weighing 8.4 kg complaining of repetitive vomiting, no flatus and defecation followed by abdominal distention, a solid palpable mass and increasing of the bowel sounds. Abdominal X-ray showed stepladder signs, edematous intestinal mucosa, no gas distributed in the pelvic area. Abdominal USG revealed a sausage and doughnut signs. An open exploratory laparotomy showed intussusceptions along the ileocaecal region with multiple bands as the lead point. Resection and ileostomy was performed. The pathological ileum sample was revealed a caseosa TB process. The chest Xray showed specific process. The TB score was 6. The patient then administered antituberculosis drug regimen.

**Conclusion** *A rare case of intestinal tuberculosis has been successfully diagnosed. In this endemic country of TB, it should be also suspected in patients with intussusception.*

**Keyword** : *intussusception, intestinal tuberculosis*

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### **INTRODUCTION**

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Tuberculosis (TB) remains one of the most common problems affecting patients in developing countries where poor sanitary conditions, overcrowding and malnutrition exist.<sup>1,2,3,4,5</sup> Indonesia ranks the fifth highest in TB cases proportionally after India, China, South Africa and Nigeria. The world wide annual rate of TB infection is 2.1% per year for the under-5-year-age group.<sup>6</sup>

TB can affect many organs including the gastrointestinal tract. Gastrointestinal TB is the sixth most frequent site of extrapulmonary involvement, and is

counted for 10-15% of all extra-pulmonary forms of TB cases.<sup>7,8</sup>

Intussusception is the most common cause of intestinal obstruction in patients aged 6 months-2 years, and accounts for more than 25% of abdominal emergencies in children up to age 5. Identifiable causes are found in 90% of adults, whereas in infants and young children the majority are idiopathic. Fewer than 10 percent of children with intussusception have a leading point; which its occurrence is even less common, perhaps 2% to 3%, in children less than 2 years old. Although this is rare, intestinal TB is a lead point that can initiate an intussusception.<sup>9,10,11</sup>

Ileus obstruction due to invagination/intussusceptions is associated with intestinal TB has been poorly documented, especially in children.<sup>11</sup>

We report a rare case of intestinal TB that gave rise to intussusceptions as a complication in a healthy 8 ½ -month-old girl. Although the prevalence of intestinal TB itself is still undocumented in Indonesia, it should be suspected where patients appear with abdominal obstruction. The aim of presenting this case is increase awareness of this condition since it is not normally considered in the differential diagnosis of obstruction at this age.<sup>11,12</sup>

### CASE REPORT

An 8½-month-old girl was admitted to Emergency Department with vomiting for 3 days every time she had food or drink. She also had no flatus and defecation in 1 last day. She was in moderate dehydration state and irritable. There was increasing of the bowel sounds, a distention and meteoristic abdomen with a solid palpable mass in the lower right quadrant.

Radiologic examination was performed. Anteroposterior and Laterolateral Plain abdominal X-Rays showed distended of intestinal loops and stepladder signs (multiple air fluid levels) in the small intestine, and also edematous mucosa of the intestine with gas was distributed throughout the abdomen except in the pelvic area (Figure 1). Abdominal ultrasound revealed a mass with a sausage sign and doughnut signs along the ileocaecal region. This represented an ileus obstruction and intussusceptions

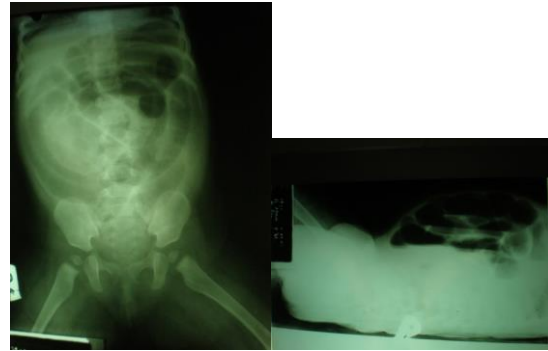


Figure 1. Abdominal X-ray

An exploratory laparotomy operation was performed. During the operation, an intussusception of the ileocaecal was found. A milking procedure was done to release the intussusception. The lead point was derived from a necrotic segment of the ileum. There were also multiple bands around the necrotic segment (Figure 2). A resection was made along the necrotic and multiple bands segment. An evaluation of upper part of the lead point showed dilatation and oedema of the intestine.



Figure 2. A necrotic segment (left) and bands of the ileal segment

An ileostomy double barrel type was performed in the lower right abdomen due to the disproportion of the upper and lower part of the resection. The pathological anatomy analysis of the ileum resection result showed wide necrotic ileum mucosae, with epitheloid cells and datia Langerhans cells and revealed a caseosa TB process.



**Figure 3.** Chest X-ray

A plain chest X-ray was made later, which showed the result of enlargement of the hilar lymph nodes, lung calcification and atelectasis of the right superior lobe which are defined a specific process. The more meticulous history taking and physical examination was performed.

The patient had suffered from chronic intermittent cough and mild fever since 5 months old. A neck examination found there was multiple enlargement of lymphnodes. Also, the chest X-ray showed that there was enlargement of the hilar lymph nodes, lung calcification and atelectasis of the right superior medial lobe, all specific to tuberculosis process. There was also contact history of the patient with someone suspected of having tuberculosis. The TB scoring that was done later was 6, that confirmed the diagnosis of tuberculosis in this patient.<sup>13,14</sup>

The patient was administered anti TB regimen with streptomycin injection 200 mg daily, and Rimcurpaed two tablets daily.

Her general condition after the surgery was good, and she had no problems with medication regimens. From routinely evaluation she had good growth and developmental status. She administered antiTB drugs in 12 months, then undergone repair colectomy operation a month after the TB treatment was completed.

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## DISCUSSION

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Abdominal TB is predominantly a disease of young adults and two-thirds of the patients are 21-40 years old with an equal sex incidence. Gastrointestinal TB is rare in children, and the involvement of peritoneum and lymph nodes is more common than gastrointestinal TB.<sup>2,5,12,13,14</sup>

The risk factors that make TB infected children are contact of active TB, endemic location, poverty, inadequate environment (unhealthy and improper sanitation), or living in general home care.<sup>13,14</sup>

In this case, the intussusceptions that occurred was in the ileocaecal region, matching literature which describe if the most common type is ileocolic; less common forms include ileal-ileal, colic-colic and ileal-ileal-colic.<sup>10</sup> The development of intussusception is associated with venous stasis in the mesenteric vessels, followed by engorgement and edema of the bowel wall that progresses to strangulation. The compromise of the vasculature, which results from the intussusception, produces colicky pain, reflex vomiting and bloody stools (currant-jelly). At times, a mass may be palpated at some point along the course of the colon; this mass represents the intussusception, bowel inside bowel, with its consequent edema and trailing mesentery and vessels. the distal ileum and cecum away from their usual position. Two thirds of patients are between 3 and 12 months of age. Less commonly, it may occur in older children, either spontaneously or in association with a leading point-that is, an anatomic lesion that initiates the intestinal invagination process. Known leading points include enlarged mesenteric nodes, hypertrophied Peyert patches in the distal ileum, Meckel diverticulum, polyps, enteric cysts, intramural hematoma, ileal duplication, lymphosarcoma, and Henoch Schonlein

Purpura. Fewer than 10 percent of children with intussusception have a leading point and its occurrence is even less common, perhaps 2 percent to 3 percent, in children less than 2 years old. Although rare, one of lead point that can initiate an intussusceptions is intestinal TB.<sup>10,11</sup>

This patient suffered from intestinal TB in the ileocaecal region. It is similar with the literature stated that the common sites of involvement in GIT are the terminal ileum and the ileocaecal region, followed by colon and jejunum. Rarely, TB may involve the stomach, duodenum, and oesophagus. But the most common site of involvement is the ileocaecal region, possibly because of the increased physiological stasis, increased rate of fluid and electrolyte absorption, minimal digestive activity and an abundance of lymphoid tissue at this site. It has been shown that the M cells associated with Peyer's patches can phagocytose BCG bacillus.<sup>2</sup>

The postulated mechanisms by which the tubercule bacilli reach the gastrointestinal tract are hematogenous spread from the primary lung focus in childhood, with later reactivation; ingestion of bacilli in sputum from active pulmonary focus; direct spread from adjacent organs; and through lymph channels from infected nodes.<sup>2,3,5,7</sup> Based on this statement, the primary infection in this case was suggested from the lung TB. As noted by the literature, the ages of peak prevalence of disseminated TB have changed over the last decades and infants are highly susceptible to progressing to miliary TB, presumably due to their relatively immature immune systems.<sup>15</sup>

In a typical case, a presumptive diagnosis can be made in the presence of known active pulmonary TB and/or revealing chest x-ray, with clinical/radiologic findings in the bowel suggestive of intestinal TB. However, a chest x-ray is positive (for active or healed

TB) in less than 50 % of patients.<sup>2</sup> Serum laboratory tests are usually nonspecific. Definitive diagnosis is based primarily upon histology, Ziehl-Neelsen staining for acid-fast bacilli, and culture, although the reported sensitivity of each test is quite variable. As a result, colonoscopy with biopsy is the most useful nonoperative diagnostic test for ileocecal TB. A combination of histology and culture of biopsy material can establish the diagnosis in up to 80% of patients. Endoscopic fine needle aspiration for cytology may be positive even when biopsy has been negative. Furthermore the hallmark of tuberculous pathology, namely caseating granulomas, may be absent in the bowel wall and present in the draining lymph nodes. Laparotomy and resection of the involved segments with culture and animal inoculation of the organisms have been performed to make a diagnosis with precision in endemic areas.<sup>2,3,7</sup> Another way to diagnose intestinal TB is by radiology imaging such as plain X ray of the abdomen, barium contrast studies, computed tomography, ultrasonography, laparoscopy, endoscopy.<sup>8</sup>

In this case, diagnosis of lung TB was confirmed by the scoring system, and intestinal TB was confirmed by the histological evidence from an operation specimen with caseation necrosis.

Despite being a treatable disease, abdominal tuberculosis carries a mortality of 4-12% which is largely due to associated problems of malnutrition, anaemia, and hypoalbuminaemia and due to acute complications. A high clinical index of suspicion and judicious use of diagnostic procedures can certainly help in timely diagnosis and treatment and thus reduce the mortality of this curable but potentially lethal disease. Early diagnosis and treatment can have a major effect on TB transmission and incidence worldwide, overriding or reinforcing other biological,

social and economic determinants of TB epidemiology.<sup>8</sup>

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### SUMMARY

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A case of intestinal TB has been reported. Intestinal TB with intussusception as complication in children is rare case. Intussusception in intestinal TB is occurs because of stricture band as a lead point, causing intestinal obstruction. The diagnosis of intussusceptions was determined by the clinical, radiologic and surgery findings. Intestinal TB was confirmed by the histological evidence of tubercles with caseation necrosis (pathological anatomy examination). Ileostomy was performed and anti tuberculosis drug regimens was administered to this patient. Base on this, intestinal TB is one of diagnosis that should be awared by every pediatrician in case of intussusception, since TB is still a common health problem in Indonesia.

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