



Case Report

Lethargy as an initial symptom of intussusception secondary to Meckel's diverticulum in a 2.5 year-old girl: Case report

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ABSTRACT

Introduction: and importance: Intussusception is one of the most common causes of acute abdomen and surgical morbidities in the childhood. In a paediatric presentation of intussusception due to Meckel's diverticulum there may be acute onset of abdominal pain, vomiting or painless red currant stools. However, Lethargy has been described as a rare presenting symptom

Case presentation: We present a case of 2,5 – year old female complained of acute alternation in consciousness followed by continuous vomiting two days later.

Clinical discussion: Her neurological examination showed a lethargic child, not reactive and hypotonic. Her past medical history was unremarkable. Abdominal ultrasonography was compatible with ileocolic intussusception. The necrotic bowel and diverticulum were resected, followed by anastomosis of the viable bowel segments. postoperatively the infant recovered dramatically.

Conclusion: Although lethargy is a rare presenting symptom of Intussusception, it should be kept as a differential diagnosis when a child presents with acute onset of drowsiness with or without abdominal symptoms.

1. Introduction

Intussusception is one of the most common causes of acute abdomen and surgical morbidities in the childhood age group. The classical clinical findings include colicky abdominal pain, vomiting and bloody stool. Bloody stool typically resembles strawberry jam [1,2].

Interestingly, lethargy has been described as a rare presenting symptom in a subset of patients [3].

It may rarely lead to acute change in consciousness. When lethargy and change in consciousness occur, the typical signs may be masked. Therefore, invagination should be considered in the differential diagnosis in patients in the infancy and early childhood age groups who present with lethargy, hypotonia and change in consciousness [4]. Intussusception encephalopathy is a previously known picture which occurs rarely and predominantly involves neurological findings generally in the absence of classical findings. Few cases have been reported in the literature [5,6].

Clearly, since most intussusceptions are idiopathic in origin, and most Meckel's diverticulum are asymptomatic, the diagnosis of intussusception secondary to Meckel's diverticulum is very rare in all

populations.

This work has been reported in line with the SCARE criteria [20].

2. Case report

A previously healthy 2.5-year-old female presented at the emergency room with complains of acute alternation in consciousness which developed in 5 hours. The patient's illness started a week before admission with occasionally postprandial vomiting.

Physical examination revealed a temperature of 38 °C, pulse of 110 per minute, and respiratory rate of 25 per minute, SpO₂-97% in room air and blood pressure was 110/65 mm Hg. Her neurological examination showed a lethargic child, not reactive and hypotonic. All her deep tendon reflexes were exaggerated with bilateral planter extensor.

(Glasgow Coma Scale [GCS] 11/15: 3, 4, and 4 for eye, verbal, and motor response, respectively).

Meningeal irritation sign or pathological reflex was not found. Her abdomen was soft, distended, not tender, and without masses.

The parents did not relate any history of trauma, toxic exposures or ingestions, upper respiratory tract infection symptoms, fever, or

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gastrointestinal symptoms. They denied the presence of any opioids in the household. The girl's past medical history was unremarkable (he took no medications and had no known allergies), and his immunizations were up to date.

Complete blood count, serum biochemical values, blood gases, ammonia and lactate values were found to be normal. Electrocardiographic examination, echocardiographic examination and cranial magnetic resonance imaging (MRI) were found to be normal.

Two hours after admission, her level of consciousness fluctuated between somnolence and stupor with confusion, and a probable diagnosis of encephalitis was entertained. lumbar puncture was obtained with normal findings. Polymerase chain reaction analysis of cerebrospinal fluid for herpes virus and enteroviruses excluded these infections.

Two days later, she complained of increased vomiting and diffusely abdominal tenderness.

Rectal examination revealed stool without blood.

Abdominal ultrasonography was compatible with ileocolic intussusception (Fig. 1).

After obtaining the patient's informed consent, surgery was planned.

The child was immediately consulted by paediatric surgery and posted for hydrostatic reduction which failed and therefore exploratory laparotomy was done. Upon surgical examination, approximately 15 cm of strangulated, non-viable small bowel was noted extruding into the ascending colon, preceded by a necrotic Meckel's diverticulum which was thought to be the pathologic lead point. The necrotic bowel and diverticulum were resected, followed by anastomosis of the viable bowel segments.

Histopathology examination ruled out malignancy and showed evidence of small bowel segment with transmural coagulation necrosis, interstitial hemorrhaging, and resection margins.

One day postoperatively the infant's behavior changed dramatically and her altered mental status resolved in the immediate postoperative period and well-formed stools.

3. Discussion

Intussusception is the commonest cause of bowel obstruction in children under 2 years of age. It occurs in 1.4 per 1000 live births.10 Intussusception is a rare presentation, being the first case reported by Goetting in the year 1990.11 It is characterized by the telescoping of one segment of bowel (intussusceptum) into its neighboring segment (intussuscepiens), situated most commonly near the ileo-cecal valve (ileocolic) [7].

In 75% of cases, the invagination is idiopathic. In children less than age 3 months or older than 5 years, however, it more commonly

originates from a pathologic lead point (e.g., Meckel diverticulum, polyp, hemangioma) or can be associated with conditions causing hypertrophy of Peyer patches (e.g., HenochSchönlein purpura, lymphoma, rotavirus infection) [8].

The incidence of Meckel's diverticula resulting in complications is 4–6% with a more classic presentation in infants under 2 years old [9]. [10]. A much smaller percentage of these complications includes intussusception, where the presentation of per rectal (PR) bleeding is more common within the paediatric age group compared to adults [11].

In a paediatric presentation of intussusception due to Meckel's diverticulum there may be acute onset of abdominal pain, vomiting or painless red currant stools [12].

Controversially, our case presented as an acute alteration in consciousness followed by continuous vomiting two days later.

The most important point in patients who present with acute change in consciousness is to recognize the high-risk patient group in whom neurological sequel or mortality may occur. Therefore, history taking and physical examination should be performed carefully [1]. At the time of admission, the airway, respiration and circulation should be evaluated rapidly and vital signs should be monitored. The possibility of trauma should be kept in mind, immobilization should be ensured, airway stability should be provided and intubation should be performed, if necessary.

The differential diagnosis of a depressed level of consciousness in a child includes trauma intussusception, psychological, Shock/stroke/syncope, alcohol, epilepsy, infection, insulin Overdose and uremia.

In our case, normal laboratory and imaging findings exclude other diagnoses.

Three possible hypotheses for this encephalopathy have been postulated. First hypothesis is due to the systemic action of toxic metabolites released from ischemic gut that depress the central nervous system as postulated by Singer in his article [13]. Another hypothesis proposed for similar manifestation is that a possible endogenous opioid poisoning by massive secretion of endorphins during pain's paroxysm [14]. This pathophysiology is not clearly understood and a subsequent study demonstrated no difference in plasma beta endorphins levels in patients admitted with intussusception compared to the controls [15]. Finally, when there is an acute abdominal pathology, it is possible that there will be derangement in the electrolyte and subsequently a metabolic encephalopathy could set in [16].

So the encephalopathy in our case may be due the action of toxic metabolites released from ischemic gut.

Intussusception due to Meckel's diverticulum is an absolute indication for Meckel's diverticulum resection [17].

The decision to undergo segmental bowel resection or wedge-shaped



Fig. 1. Abdominal ultrasound showing "target sign" of bowel-within-bowel.

excision is now commonly dependent on a parameter known as the height-dimension ratio and clinical impression of whether an ectopic tissue mass is present [18]. [19].

In our case, Meckel's diverticulum had a wide base or presence of an ectopic mass, so the necrotic bowel and diverticulum were resected, followed by anastomosis of the viable bowel segments.

4. Conclusion

Although lethargy is a rare presenting symptom of Intussusception, it should be kept as a differential diagnosis when a child presents with complaints of acute onset of drowsiness with or without abdominal symptoms. Early diagnosis could save grave complications and improve the prognosis.

Ethical approval

This case report didn't require review by Ethics committee, Tishreen university hospital, tishreen university, Faculty of medicine, Lattakia-Syria.

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Author contribution

Maysaa Badour: Contribution to the paper: first author, data collection, writing the paper; Sameer Baqla: Contribution to the paper; Treatment and examination of the patient. Writing the paper; Dr. Ali Hammed (corresponding author): Contribution to the paper: Writing the paper.

Consent for publication

Written informed consent was obtained from the patient's parents for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Registration of research studies

The case report at hand is not a first-in-man case report of a novel technology or surgical technique, therefore a registration of these case reports according to Declaration of Helsinki 2013 is not required.

Provenance and peer review

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Guarantor

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Declaration of competing interest

All authors declared no conflict of interest.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.amsu.2021.102562>.

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