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Acute Colonic Pseudo-Obstruction (Ogilvie Syndrome) Presenting with Septic Shock in Children with Cerebral Palsy

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Abstract **Case Report**

Introduction: Acute colonic pseudo-obstruction, or Ogilvie syndrome, is a motility abnormality characterised by rapid and progressive dilation of the large intestine. It is seen in the adult population, but rarely in children. To achieves a diagnosis it is fundamental to exclude mechanical obstruction with imaging studies such as computer axial tomography. ***Clinical case:*** child of 08 years old with a history of cerebral palsy and anemia came to the pediatric emergencies for abdominal distension and vomiting evolving since a day before admission, all in a context of deterioration in general and feverish condition. The diagnosis of septic shock was made, and radiological examinations confirmed the diagnosis of Ogilvie syndrome. The treatment was conservative with slight clinical amalgamation at start but the symptoms worsened afterwards and the patient die 05 days later. ***Conclusions:*** Ogilvie's syndrome is a rare condition in the pediatric population. Abdominal x-ray plays a crucial role in the diagnosis and management of ACPO, and CT scan help to look for complications. Conservative management in this disease is the initial approach. Interventions should be reserved for when conservative treatment fails.

Keywords: Acute Colonic Pseudo-Obstruction Septic Shock Cerebral Palsy.

INTRODUCTION

Acute colonic pseudo-obstruction (ACPO), or Ogilvie syndrome, is a rare complication mostly described in adult patients with severe underlying medical or surgical conditions and however, an increased number of cases of Ogilvie's syndrome have been reported in children with oncological diseases, after spinal surgery, in sickle cell and Kawasaki disease, and after renal transplant [1].

It is a gastrointestinal motility disorder characterized by marked colonic dilation in the absence of mechanical obstruction. It is an uncommon but potentially fatal condition with significant morbidity and mortality that can be prevented by early diagnosis and prompt management [5].

CASE REPORT

A 08-year-old child with cerebral palsy (CP) and anemia, presented to the pediatric emergencies for abdominal distension and vomiting evolving since a day before admission, all in a context of deterioration in general and feverish condition.

His abdomen was markedly distended and rigid .Bowel sounds were absent. Laboratory analysis revealed: white blood cell count 22,560/mm, hemoglobin 5.5 g/dl, platelet count 173,000/mm, C-reactive protein 204.06 mg/L, creatinine 2mg/dl, sodium 138 mEq/L, potassium 4.9 mEq/L, calcium: 63 mg/dl, alanine aminotransferase was 108 U/L, g-glutamyl transpeptidase 18 U/L, lactate dehydrogenase 999 IU/L. Blood, urine, Cerebrospinal fluid, fungal, and bacterial cultures were negative.

X-ray of the abdomen without preparation was requested and who objectified marked distended all colon with large stool collection (Fig 1). Abdominal computed tomography (CT) was planned and who objectified significant recto sigmoid distension and colonic frame, measuring 80 mm in maximum anteroposterior diameter, site of significant stercoral stasis without signs of mechanical obstruction or perforation. This distension is responsible for a repression of the stomach, the pancreas and the slender loops backwards, pushes the liver upwards and the bladder downwards and forwards (Fig 2 and 3).

The diagnosis of Ogilvie syndrome was entertained because of massive abdominal distension with preferential colonic dilation without signs of mechanical obstruction or perforation.

The child was managed conservatively with nasogastric tube and rectal tube insertion for decompression, electrolyte correction, and intravenous fluid replacement, urinary catheterization to monitor urine output, antibiotics and analgesic medications.

Abdominal x-ray for control was requested who objectified clear regression of intestinal distention (Fig 4). But the patient had a persistence of biological disorders despite treatment with multivesciral failure .She dead 05 days after admission.

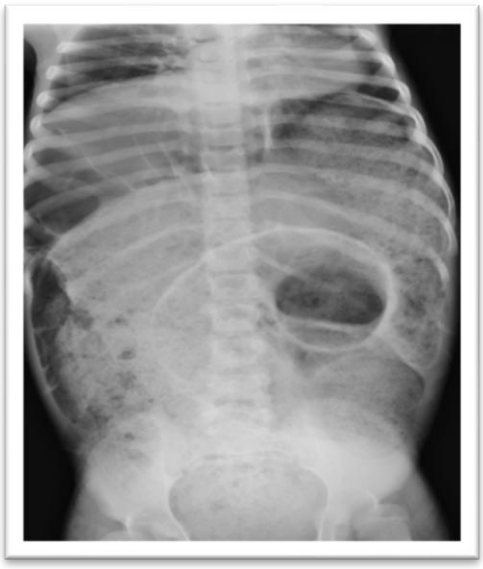

Fig-1: Anterioposterior abdominal x-ray showing severe colonic dilatation without air/fluid levels and free air, from the pseudo-obstruction with large stool collection X-ray revealing

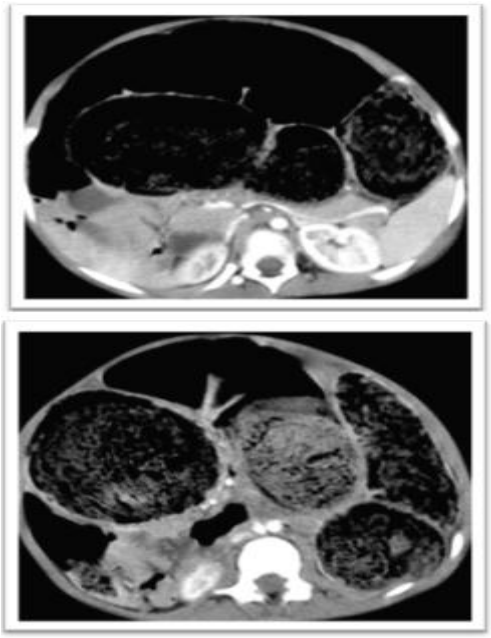

Fig -2: Axial contrast enhanced CT image show of the pseudo-obstruction and severely dilated colon. With large stool collection pushing back of the abdominal organs

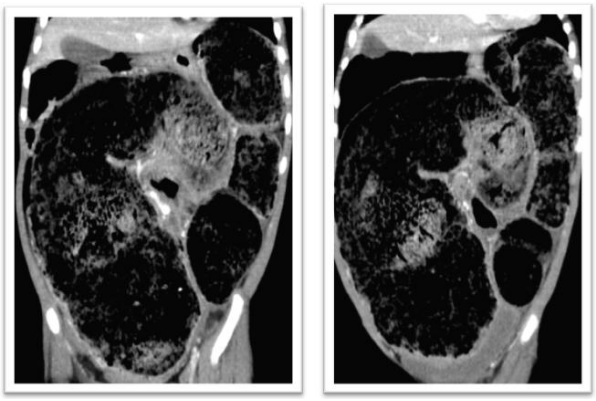

Fig-3: Coronal and sagital contrast inhanced CT image schow markedly distended colon with large amount of fecal material with pushing the liver upwards and the bladder downwards and forwards

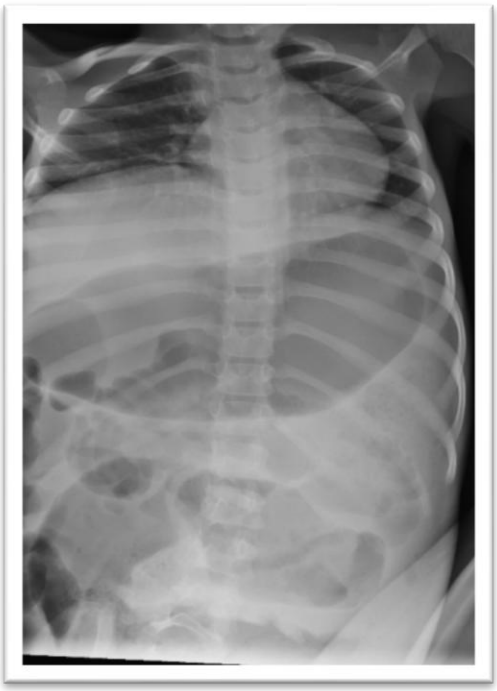

Fig-4: Abdominal control X-ray after colo-exsufflation objective the persistence of colonic distension with regression of fecal material

DISCUSSION

Ogilvie syndrome was named after Sir Heneage Ogilvie, who in 1948 described 2 patients with colonic obstruction without evidence of organic obstruction to intestinal flow. Hence, ACPO is also known as Ogilvie syndrome. It is seen in the adult population, but rarely in children [7]. With an estimated incidence of 100 cases per 100000 admissions and a mortality rate of 8% Colonic ischemia or perforation occurs in up to 15%, and is associated with an estimated 40% mortality [4]. ACPO usually occurs in hospitalized patients with severe illness or trauma, or following general, orthopedic, neurosurgical, gynecological or other surgical procedures. Therefore, early recognition and appropriate therapy are important determinants of

prognosis [4]. It is characterized by decreased gastrointestinal motility, massive dilatation of the colon without signs of mechanical obstruction, and limited small bowel involvement [9]. The pathophysiology is not completely understood. It is believed to result from either suppression of sacral parasympathetic nerves or an increase in sympathetic tone leading to inhibition of colonic motility. It is accompanied by dilation of the proximal colon resulting in retention of large quantities of gas and fluid. This leads to distension and increased intraluminal pressure in the proximal colon and cecum. This intraluminal pressure impedes the cecal capillary circulation leading to ischemia, gangrene, and perforation [7]. Ischemia or perforation is the feared complication of ACPO; spontaneous perforation has been reported in 3% to 15% of patients with a mortality rate of 50% or higher. Depending on the severity of the underlying illness, the overall mortality may be as high as 25% to 31 % [3].

Diagnostic positif

The diagnosis of Ogilvie syndrome is based on history, physical and radiological examination, and exclusion of other diagnoses. There are no specific laboratory tests but the plain abdominal radiographs are the most useful diagnostic tool for this disorder [15]. The barium enema has long made it possible to seek out an eventual mechanical obstacle. Its osmotic effect sometimes eliminates an obstacle. It is contraindicated in cases of suspected colonic perforation. Its interest is now less compared to scannography [8].

Abdominal x-ray plays a crucial role in the diagnosis and management of ACPO. It shows a massively dilated colon with minimal or no distention of the small intestine. The cecum and right hemicolon is the usual site of the largest dilatation in patients [3]. X-rays should be obtained immediately for a patient if one has concern about an obstructive process, especially if the suspicion is high for perforation. An acute abdominal series with an upright chest can provide e vital information. Free air under the e diaphragm indicating bowel perforation, differential air fluid levels indicating an ileus, and grossly dilated loops of bowel indicating an obstructive process can typically be seen and diagnosed from an x-ray.

Although CT with oral and intravenous contrast medium is not essential for the diagnosis, it may be helpful in excluding the presence of frank perforation, obstruction, and toxic megacolon. Additional information can be obtained from a CT regarding the location of the obstruction based on the transition zone. Measurement of the colonic distention has been suggested as a potential guide to management and is routinely assessed radio graphically [3]. On CT images, there is normal haustral marking, lack of gas in the distal colonic segments, and marked dilatation of the colon in the absence of any obstructive lesion. Evidence of rapid cecal dilatation or a cecal diameter larger than 11 to 13 cm on abdominal x-ray radiographs has been associated with increased risk of cecal ischemia, necrosis, and perforation [3].

Complications and maximum tolerable caecal diameter

Studies have stated that dilation of the transverse colon of as little as 9 cm is potentially dangerous, and patients with cecal diameters>10-12 cm have been shown to be at higher risk of perforation . But the maximum tolerable caecal diameter is source of debate, all the authors agree on the fact that it is correlated with the risk of perforation. Most of the series retain an upper limit of 9 cm. In fact, the study by Vanek and Al-Salti reported no perforations for patients with <12 cm cecal diameter, a 7% perforation and ischemia rate for 12-14 cm, and 23% for patients with >14 cm cecal dilation [2]. Our own case reveals a 08 cm dilation of the cecal without evidence of perforation or ischemia.Death is linked more to decompensation of underlying visceral defects than to the risk of secondary perforation of the colon. Despite the massive dilation of the colon, the patient suffered no significant sequelae. Of additional interest, a retrospective study by Johnson et al. actually concluded that the duration of cecal distention may be associated with the perforation rate, but that the diameter was not. There may also be a significant difference in perforation risk in patients with severe colonic dilation with only moderate cecal dilation; however, no such comparison was found during a review of the literature [2]. Poor prognosis factors are represented by age, ischemia, occurrence of a cecal perforation and time to colon decompression of more than 6 days [8].

Treatment

The primary aim of the treatment is to halt the evolution ischemia or perforation. The initial step is to as certain that there is no mechanical obstruction that requires an operative intervention. Conservative management is the initial mode of therapy because spontaneous resolution is seen in 85% of cases [5]. The management includes placement of a nasogastric tube, enemas, fluid resuscitation, and correction of electrolyte abnormalities. Antibiotics may be given to provide some coverage for patients who are suspected to have bowel ischemia or perforation [2]. Close monitoring with frequent physical examination and eventually repeating of abdominal x-ray are recommended in order to highlight changes in clinical condition [9]. Conservative management is thought to be appropriate in patients without significant pain or dilation (<12 cm) [2]. Patients for whom supportive therapy fails may be treated with the parasympathomimetic agent neostigmine [6]. Anticholinergic agents such as neostigmine have been shown to have high success rates with restoration of peristalsis and have been used to treat ACPO successfully. Trevisani showed clinical resolution of the acute pseudo-obstruction in 26 of 28 patients with the use of neostigmine [2]. In the small

group of patients for whom conservative or pharmacologic therapy fails, more invasive methods of colonic decompression are available. Decompression of the colon is routinely determined based on the severity of the pseudo-obstruction, and therefore early consultation with surgery or gastroenterology is appropriate. Colonic decompression may be indicated when the cecal diameter is >12 cm .The need for colonoscopic decompression. Despite this usual recommendation, our patient did well without this invasive procedure, and success rates may only be as high as 61-78% with a reported recurrence rate of 18-33%. Iatrogenic perforation during this procedure has been reported as 3% [2]. Surgical interventions, such as tube cecostomy, cecosto m y, i l e o s t o m y / c o l o s t o m y, resection, exteriorization, intraoperative long colon tube, and exploratory laparotomy are reserved for patients who failed other management modalities [2].

CONCLUSION

Ogilvie's syndrome is a rare condition in the pediatric population. It should be considered in all patients with significant abdominal distention. This syndrome occurs in patients with serious medical and surgical illnesses including stroke, myocardial infarction, neoplasia, metabolic disturbances, spinal injury, peritonitis, sepsis, and shock, and with various medications. The cerebral palsy and dysmorphic neonatal syndrome are usually associated with disorders of the central nervous system. The incidence of this disease with Ogilvie syndrome has not been described to date. Abdominal x-ray plays a crucial role in the diagnosis and management of ACPO, and CT scan help to look for complications. Conservative management of this disease is the initial approach; surgical intervention should be reserved for when this fails.

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