



Acute colonic pseudo-obstruction in elderly

Report of a case

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Acute colonic pseudo-obstruction in elderly. Report of a case

A case of acute colonic obstruction in an elderly patient is presented, with a brief discussion about peculiar aspects to pseudo-obstruction and particularly chronic idiopathic intestinal pseudo-obstruction (CIIP), in which it was classified by pathologists. Clinical and therapeutic implications of this classification are also discussed.

In authors' opinion, interesting aspects of the reported case are represented by the acute presentation, without previous symptoms at medical history and above all by the evidence of a recto-sigmoid junction intraoperatively palpable mass, mimicking ring-like neoplastic disease.

The preoperative and intraoperative features led surgeons to perform a total colectomy with ileo-rectal anastomosis and high ligation of mesenteric inferior artery, with complete regional lymphectomy according to oncologic standard, but at histological examination the mass revealed to be due to considerable muscular tissue thickening, therefore to a benign condition.

These features probably suggest the need of a better clinical and pathological classification of this difficult and still controversial matter, in order to achieve better outcomes and to avoid misdiagnosis and overtreatment.

KEY WORDS: Intestinal obstruction, Pseudo-obstruction, Total colectomy

Introduction

Acute colonic pseudo-obstruction (ACPO) or Ogilvie's syndrome and chronic intestinal pseudo-obstruction (CIPO/CIIP for the idiopathic form) may clinically mimicking a mechanical obstruction, but occur in the absence of any gut-occluding lesion. The differences between these two separate clinical entities are based upon the history, the clinical context and the underlying pathology^{1,2,3}. ACPO is an acute illness occurring mainly in the elderly with underlying co-morbidities and/or history of recent

trauma or surgery, while CIPO is a rare syndrome affecting the pediatric and young adult population, with recurrent sub-occlusive episodes. While considered functional, the term 'pseudo' does not imply any lesser severity or urgency for treatment^{1,4,5}. We believe that, although the rarity of these conditions, the dramatic impact they can have on clinical management should not be under-evaluated.

We present a rather anomalous case of acute colonic obstruction in an elderly patient, classified by pathologist as CIIP, but without previous symptoms, or better still with acute presentation and history and clinical features more suggestive for ACPO. It seems above all interesting the presence of an evident recto-sigmoid junction intraoperatively palpable mass, mimicking ring-like neoplastic disease, that shouldn't be present in a typical ACPO and due to muscular tissue thickening at histological examination; our feeling is that in this aspect is lying the interest of the case report, being probably necessary a better classification of this still controversial matter.

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Case Report

We report the case of P.R., a 79 year-old male presenting in our hospital Accident and Emergency Unit with abdominal distention, worsening intense crampy pain, nausea and vomiting for the last 7 days.

No previous similar symptomatology was ever referred by the patient and his family members. Neither evident symptoms and signs of malnutrition and malabsorption or other relevant diseases were noticed in his medical history. The patient just underwent appendectomy during his childhood and suffered from arterial hypertension under treatment with ACE-inhibitor, diuretic and calcium-channel blocker medication (amlodipine 5 mg/die).

Physical examination revealed a very distended, non-tender, tympanitic abdomen, with highpitched tinkling and absent bowel sounds. Severe cutaneous and mucosal

dehydration was evident and confirmed by routine laboratory tests. EKG and chest X-ray were normal.

Plain abdominal X-ray evidenced multiple air-fluid levels in the upright position without signs of free air. Conservative treatment was initiated with positioning of nasogastric tube and rectal probe and with intravenous fluid administration.

CT-scan with intravenous contrast showed peritoneal free fluid, massive distention of the whole colonic tract, with multiple air-fluid levels and with pericolic fat and sigmoid-rectal junction wall thickening, determining stenosis of the lumen, and multiple lymphadenopathies in the mesenteric fat.

On the 2nd day after admission in Surgical Unit, persisting the occlusive state and improving the metabolic



Fig. 1: Massive dilation in caecum and sigmoid colon.

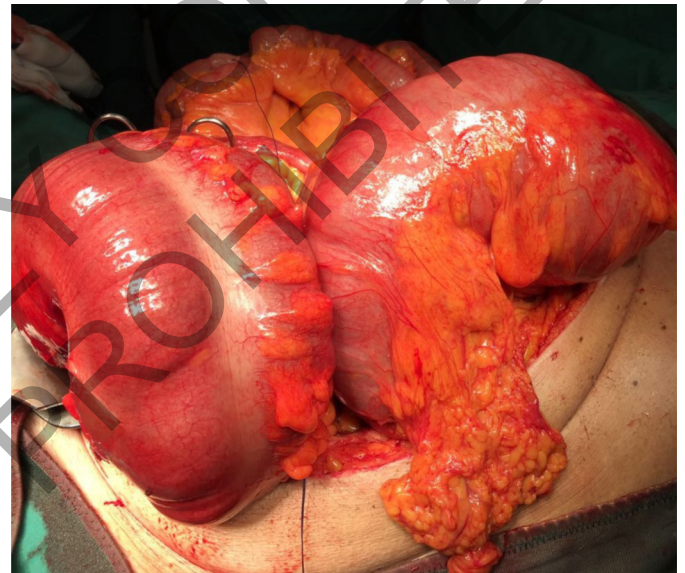


Fig. 3: Huge distention of caecum-ascending and sigmoid colon. Diastatic lesion appears on the right side of the caecum.



Fig. 2: Colon distention and gut-occluding lesion in the recto-sigmoid junction.

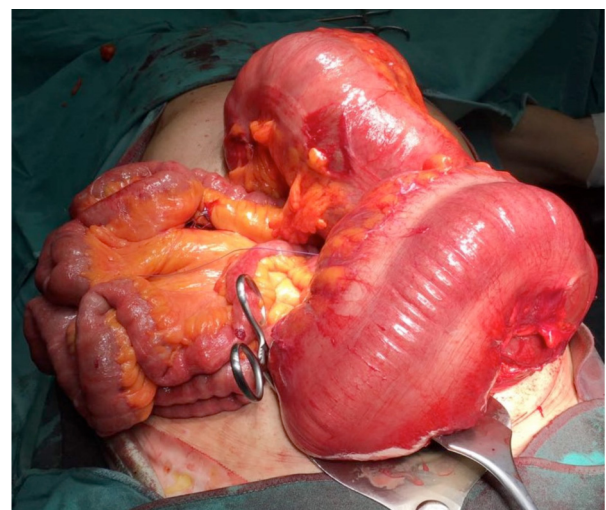


Fig. 4: Distention of transverse and sigmoid colon with diastatic lesions.



Fig. 5: Total colectomy specimen, with recto-sigmoid junction occluding lesion and inferior mesenteric artery high ligation for a complete regional lymphectomy.



Fig. 6: Haematoxylin-eosin 5X. Hypertrophy of the muscularis propria, thickening of the muscularis mucosae and reduction of the submucosal layer in the colonic wall at concentric stenotic tract. In the subserosa presence of a considerable additional layer of muscular tissue above the longitudinal muscularis propria. Ganglion plexuses identified only focally, with a remarkable reduction of nervous structures.

conditions, patient was referred to surgery for intestinal obstruction due to suspected tumour of recto-sigmoid junction.

Laparotomy evidenced abundant sero-hemorrhagic fluid which was sent for cytology. It was evidenced a massive distention of the entire colon with multiple diastatic lesions, especially at the descending and transverse colon; the caecum presented a diameter of 12 cm, while small bowel showed normal aspect and size. At the site of obstruction, corresponding to the recto-sigmoid junction, a mass adherent to the bladder and to some ileal loops was identified. Resection was performed according to oncologic standards, with inferior mesenteric artery high ligation for complete regional lymphectomy and distal section in the upper rectum 5 cm below the palpable occluding lesion, with partial mesorectal excision. Total colectomy was necessary, due to the number of diastatic lesions of the entire colon and the ischemic and atonic aspects of the visceral wall. A mechanical EEA stapler latero-terminal ileo-rectal anastomosis was performed, lacking clear signs of peritonitis.

Postoperative course was uneventful and the patient was discharged on the 10th day in satisfactory clinical conditions.

Results

Histopathology showed hypertrophy of the muscularis propria associated with muscular thickening of muscularis mucosae and reduction of the submucosal layer in the concentric stenotic tract 6 cm in length. In subserosal layer it was evidenced the presence of a considerable additional layer of muscular tissue above the lon-

gitudinal muscularis propria. Ganglion plexuses were identified only focally, with a remarkable reduction of nervous structures. Ileal and colonic mucosa showed signs of ischemic enteritis. Isolated lymphnodes evidenced lymphatic hyperplasia. The microscopic aspect is consistent with the diagnosis of chronic idiopathic intestinal pseudo-obstruction (CIIP).

At 22 months follow-up the patient has got a good performance status, regular nutrition, 2-3 daily evacuation of almost formed faeces. Routine laboratory tests are normal.

Discussion

Acute colonic pseudo-obstruction (ACPO) or Ogilvie's syndrome and Chronic intestinal pseudo-obstruction (CIPO) are two distinct definite pathological entities, different above all for history and age of presentation and for some clinical features, but sharing an important aspect revealed by the term "pseudo-obstruction". This means that both these diseases consist of dilation, sometimes massive, of part or the entire colon, without any intrinsic or extrinsic mechanical intestinal obstruction¹⁻⁵.

ACPO patients are elderly or middle-aged and almost all affected by underlying associate conditions, with the idiopathic form comprising only 5%¹.

More common predisposing factors associate with ACPO are: surgical operations; pelvic or spinal trauma or fracture; cesarean section and also vaginal delivery after normal pregnancy; infective or inflammatory abdominal diseases, like acute pancreatitis and cholecystitis; neurological diseases, like Parkinson's and Alzheimer's disease or stroke; many neoplasms; medications delaying gut motility, like anti-depressant, opiates, laxative, anti-Parkinsonian drugs, calcium-channel blockers, cytotoxic drugs; electrolyte imbalance, like hypokalaemia and hyponatraemia; diabetes; liver, renal and cardiac failure; nephrolithiasis and many others diseases^{2-3,6,7,8,9}.

ACPO is due to a functional disorder of intestinal motility, with incomplete coordination between smooth muscle cells of intestinal wall and neural elements of myenteric and submucosal nervous plexus, whose integrated activity allows correct gut peristaltic motion, through a balanced sympathetic and parasympathetic autonomic nerve function¹⁻¹⁰.

ACPO clinical features are indistinguishable from mechanical intestinal obstruction, in presence of abdominal distention, tympanism, tinkling and reduced or absent physiologic bowel sounds^{2,6,7,8}. Imaging is necessary to confirm diagnosis, plain abdominal X-ray showing the involvement of different gut tracts, while CT-scan with intravenous contrast and eventually with rectal contrast or a gastrographin swallow allows to exclude mechanical obstruction, with sensitivity and specificity of about 90%. CT scan can also detect with accuracy signs of perforation or ischaemia due to massive caecal distention, that is associated to significant increase in morbidity and mortality if diameter exceeds 12 cm^{11,12,13}, or 10 cm in many authors' opinion¹⁴. Perforation and ischaemia occur in 3-15% of cases¹.

Colonoscopy can be useful for diagnosis and colon decompression, with a risk of perforation which stands at 2%¹⁵⁻¹⁶.

CIPO patients instead are children or young adults, with a median age of 17 years at the onset of symptoms, and this syndrome accounts for about 20% of adult chronic intestinal failure¹⁻⁵. The majority of cases are idiopathic (CIIP), sporadic and associated with severe malnutrition and poor prognosis, particularly in the childhood, but also in adult patients the mortality rate may achieve 30% after 10 years disease duration¹⁻⁵.

CIPO, as ACPO, is a functional disorder of gut motility and 3 forms have been classified under pathophysiological perspective: neuropathies, myopathies and mesenchymopathies, with possible combined forms. Hirschprung's, Chagas' and von Recklinghausen's disease, Scleroderma, Ehlers-Danlos' disease, dermatomyositis are some causes of secondary CIPO³⁻⁵. The most involved intestinal tract is the small bowel, but the distinctive character of CIPO is the recurrence of sub-occlusive or occlusive episodes, whose features are the same as for ACPO³. Nausea and vomiting, diarrhoea and constipation, abdominal distention and visceral pain,

signs of malabsorption and malnutrition can be present between the acute episodes^{1,3,5}. Bacterial overgrowth has got a probable role in worsening situations and antibiotic therapy, i.e. with rifamixin, prebiotics and probiotics are effective in this case^{1,3,5}. The diagnosis is very difficult and it's mandatory excluding gut-occluding lesions; laparoscopic surgical approach, in order to perform full-thickness intestinal biopsies is achieving an always more important diagnostic role, overall in patients unresponsive to medical treatment, with a 89% diagnostic yield^{3,17}.

The first therapeutic choice in not-complicated ACPO and CIPO, that is in absence of signs of peritonitis, perforation or ischaemia, is conservative medical treatment consisting in fluid administration and correction of electrolytes abnormalities, nasogastric and eventually rectal tube placement, prokinetic drugs, specific therapy of present underlying illness, with the elimination of all delaying gut motility medications^{1,14}. Conservative treatment is successful in 77-96%, usually within 3-5 days, so it's widely accepted that a conservative approach should be done over the first 48-96 hours from presentation¹⁴⁻¹⁸; it must be suspended if intra-abdominal complications are suspected and in the presence of clinical signs of sepsis, metabolic acidosis with high-level of lactates, increasing of neutrophile leukocytosis, impairing of renal function¹⁴. After this period, if conservative measures failed, intravenous infusion or subcutaneous neostigmine can be used to increase colonic contractility, also in multiple doses, with 94% success rate and 27% recurrence rate; electrolyte imbalance is neostigmine - poor response predictor¹⁴. Instead prokinetic drugs are little effective. The best results can be achieved with colonoscopic decompression undertaken by an experienced endoscopist, preferably with decompression tube placement, that increases the success rate till 90%, vs 25% when the tube is not placed^{16,19}. Recurrence can be prevented using low-dose oral PEG solution or pyridostigmine, a long-acting acetylcholinesterase inhibitor^{20,21}. The long-term therapy for CIPO, because of its chronic clinical course, underlying pathologies and nutritional and psychological implications, is very difficult and multidisciplinary.

Surgery should be the last recourse in this pathological conditions. In case of failure of conservative therapy, colostomy or caecostomy can be performed, also under sedation in unfit patients, as surgical or percutaneous endoscopic stoma^{22,23,24}. Laparotomy for colonic resection is indicated only in presence of peritonitis, perforation or ischaemia, and it's associated with a high morbidity and mortality rate, till 44% in some studies^{4,8,14}. In case of concomitant peritonitis, a stoma is the better option after resection, and ileostomy will be performed if total colectomy is needed; in other cases anastomosis may be performed, after careful evaluation of local and general conditions^{8,14}. A real problem is that the rare clinical manifestations of these diseases can lead

to delay in diagnosis, misdiagnosis and consequent poor outcomes or overtreatment^{1,4,8}. But sometimes, like in our case report, the acute presentation and the clinical and radiological features make the correct preoperative and intraoperative diagnosis very difficult and nearly impossible and therefore the treatment is strongly conditioned by the imprecise assessment of the disease.

Conclusions

Acute colonic pseudo-obstruction (ACPO) and Chronic intestinal pseudo-obstruction (CIPO/CIIP) are distinct pathological conditions of difficult diagnosis and therapy. Crucial in the management of these functional disorders of gut motility is the careful evaluation of the absence of mechanical intestinal obstruction, due to a tumour or to another disease needing a surgical procedure. Also important appears the evaluation of clinical signs indicating an urgent or emergency operation, like massive caecal distention or colonic ischaemia.

In the reported case, based upon history, clinical context and imaging, surgeons were persuaded of the presence of malignancy, and also the intraoperative assessment confirmed this opinion, showing a recto-sigmoid junction lesion liable for intestinal obstruction. Consequently the urgent surgical procedure was performed according to oncologic standards, with overtreatment. Only the microscopic evaluation definitively demonstrated a benign disease. Furthermore histopathology showed a muscular tissue thickening in the colo-rectal junction wall, producing a mechanical intestinal obstruction, that makes doubtful the classification of this case between pseudo-obstructive clinical conditions, requiring the exclusion of gut-occluding lesions. Probably that could mean further investigations and a better classification of these pathological entities are required.

Riassunto

Viene presentato un caso di occlusione acuta del colon in un anziano, con una breve discussione sugli aspetti caratteristici della pseudo-ostruzione intestinale, soprattutto nella sua forma cronica idiopatica (CIIP), in cui il caso è stato inquadrato dai patologi, e sulle implicazioni cliniche e terapeutiche di questa classificazione. Secondo gli autori, rappresentano aspetti interessanti del caso clinico in esame: la presentazione acuta, in assenza di sintomi pregressi attribuibili alla CIIP, malattia cronica per definizione; ed, in particolare, l'evidenza pre ed intraoperatoria di una lesione palpabile occludente della giunzione sigmoide-rettale, che è in contraddizione con l'inquadramento nosologico del caso in esame nel capitolo delle pseudo-ostruzioni, che sono, per definizione, condizioni patologiche di natura funzionale. Simulante una neoplasia anulare stenotomica, la tumefazione suddetta

appare dovuta ad un rilevante ispessimento della tonaca muscolare propria del viscere all'esame istologico. Questi caratteri paiono rilevanti soprattutto perché hanno indotto i chirurghi ad eseguire una colectomia con intento oncologico radicale e quindi con linfadenectomia regionale completa, che, alla luce del risultato anatomico-patologico, si configura come un sovra-trattamento.

Gli aspetti evidenziati sembrano tali da suggerire la necessità di un migliore inquadramento clinico-patologico di questo argomento per certi versi ancora controverso, al fine di ridurre la possibilità di diagnosi tardive od errate e migliorare i risultati terapeutici, evitando il sovra-trattamento, in pazienti che hanno spesso un lungo vissuto di malattia e possono rivelarsi, pertanto, di gestione problematica.

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