A new approach to the cure of the Ogilvie's syndrome

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P. Carcoforo, E.F. Jorizzo, U. Maestroni, G. Soliani, L. Bergossi, E. Pozza

University of Ferrara
General Surgery Department
Chief: Prof. I. Donini

Riassunto

UN NUOVO APPROCCIO NELLA TERAPIA DELLA SINDROME DI OGILVIE

Gli Autori descrivono la loro osservazione di 25 casi di pseudo ostruzione acuta del colon, meglio nota come Sindrome di Ogilvie con lo scopo di dimostrare che una diagnosi precoce e una tempestiva ed appropriata terapia, meglio se conservativa, è in grado di ridurre sia la morbilità che la mortalità della Sindrome di Ogilvie. La terapia chirurgica viene adottata solamente in quei casi in cui il rischio di perforazione del ceco rappresenta una indicazione assoluta all'intervento.
Parole chiave: Sindrome di Ogilvie, perforazione del ceco.

Abstract

The Authors describe a their own observation of 25 cases of acute colonic pseudo obstruction, better known as "Ogilvie's Syndrome" with the objective to demonstrate that an early recognition and prompt appropriate therapy, better if conservative, can reduce the morbility and the mortality of the Syndrome. The surgical therapy is reserved only to that cases in which the risk of perforation of the cecum represent an absolute indication to intervention.
Key words: Ogilvie's Syndrome, cecal perforation.

Introduction

A wide variety of medical and surgical conditions are associated with the development of an acute colonic pseudo-obstruction (12, 13, 14, 15, 16, 17). There is also a rare condition describe by Olgive which is characterized by many features of on acute large-bowel obstruction, without evidence of a mechanical cause (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11).
The etiology of this condition remains obscure. Several studies suggest that the syndrome might be a consequence of an imbalance of sympathetic and parasympathetic supply of the colon (18, 19, 20, 21, 22, 23).
If the acute colonic pseudo-obstruction is recognized in an early stage, operative intervention can be elliminated in most of the case. In fact, the first line of the management has shifted to the colonscopic decompression since its introduction by Kukora (24).
We bave analyzed 25 cases of Ogilvie's syndrome with the aim to value the most common predisposing conditions, because early recognition and prompt appropriate therapy, may reduce significally morbility and mortality of the syndrome.

Materials and methods

From january 1991 to january 2000, 25 consecutive patients, were admitted to the General Surgery Department of the University of Ferrara, and diagnosed with Ogilvie's syndrome.
The average patient's age was 73,86 (range 36-96); males predomining by a 3: 1 ratio (19 males and 6 females).
In all cases the diagnosis of Ogilvie's syndrome was established by the observation of the clinical details. Moreover it was confirmed by x-ray of the abdomen and by contrast enema or colonscopy.
In accordance with other authors, we have chosen the following parameters:
– the increase of trasversal caecal diameter on a plain x-ray above 9 cm or more;

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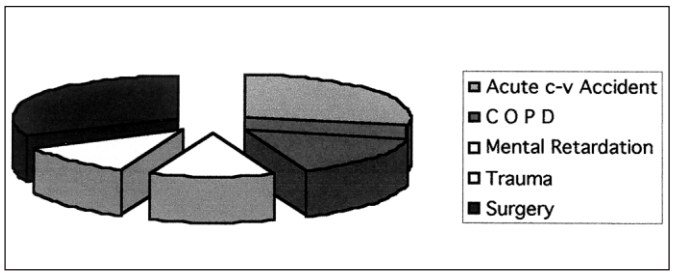
– the presence of massive abdominal distension, in the absence of mechanical obstruction proven by colonscopy or contrast enema;
– the acute onset of the colonic pseudo-obstruction.

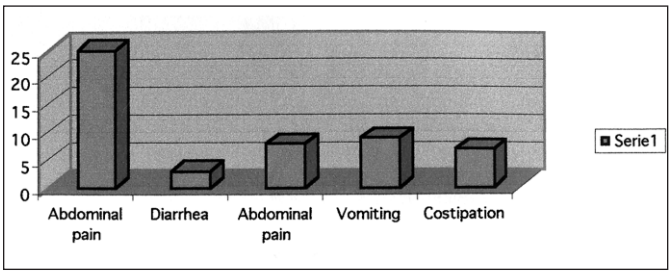
Results

We have analyzed 25 patients with Ogilvie's syndrome. The diagnosis in 7 patients (28%) was confirmed in the Emergency Department.
In 6 patients (24%) were sent to the Department of Internal Medicine where it was recognized after surgical consultation. In 3 patients (12%) that were hospitalized in the Neurologic Department. In 5 patients (20%) that were hospitalized in other Surgical Departments and in 4 (16%) patients in our department who developed the syndrome postoperatively.
The Ogilvie's syndrome was associated in 7 patients (28%) with acute cerebro-vascular accident, in 4 patients (16%) with chronic obstructive pulmonary disease, in 3 patients (12%) with mental retardation, in 3 patients (12%) with trauma and in 8 patients (32%) with surgery proceedures, ortopedic, gynecologic and colonic surgery (Table I).
The average days of hospitalization prior to referral of the surgical service was 11,1 days (range 6-20); far the patients who developed the syndrome postoperatively and the average days before the diagnoses was 12,8 days (range 6-23).
At the time of the diagnoses we observed marked abdominal distension in all the patients, vomiting in 9 (36%), diarrhea in 3 (12%), constipation in 5 (20%) and abdominal pain in 7 (28%). On physical examination none had evidence of perithonism (Table II).
We have recorded some imbalance in basic serum electrolytes: the most frequent was hypokaliemia in 18 patients (72%), then hypocalcemia in 15 patients (60%) and hyponatriemia in 9 patients (36%) (Table III).
In all the patients we have performed an abdominal x-ray film which disclosed distended small bowel and proximal colon.
Transverse cecal diameter was measured from radiography when the syndrome was suspected: the average transverse cecal diameter was 11,3 cm (range 9,7-15,1) (Fig. 1).
A contrast enema was performed to exclude an organic colonic obstruction in patients who had prior undergone colon surgery.
The diagnose was confirmed in all patients by a colon-

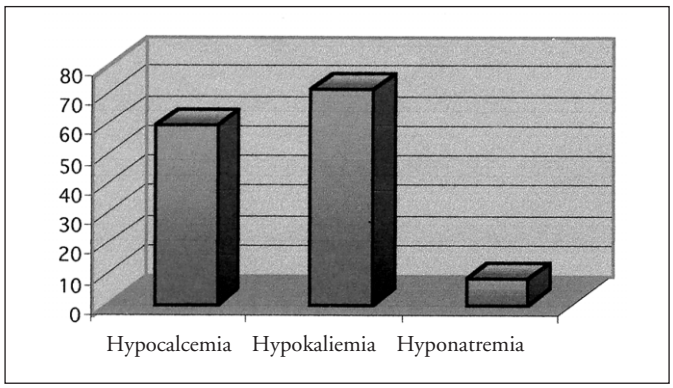
Table I – CLINICAL CONDITIONS ASSOCIATED WITH OLGIVIE'S SYNDROME



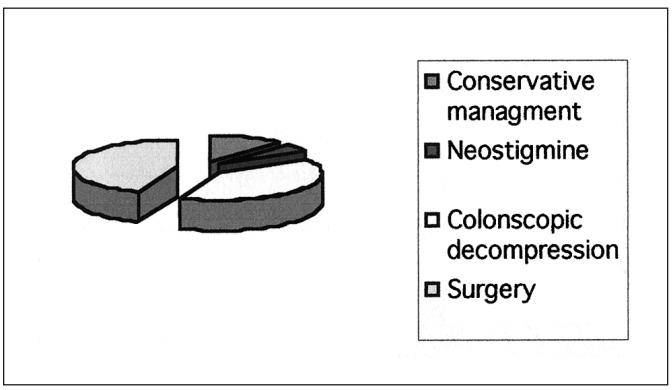
Tab. II – MAJOR SYMPTOMS OGILVIE'S SYNDROME



Tab. III – ELECTROLYTE ABNORMALITIES IN OLGIVIE'S SYNDROME



Tab. IV – DIFFERENT TREATMENTS FOR OLGIVE'S SYNDROME



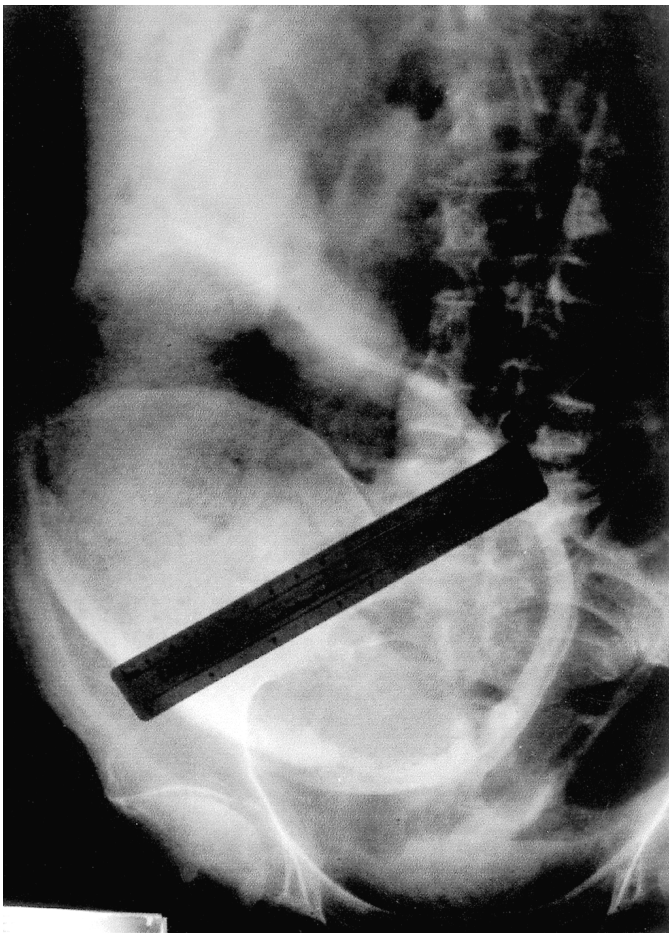


Fig. 1: When the syndrome is suspected, we misure the transverse cecal diameter *from* radiography.

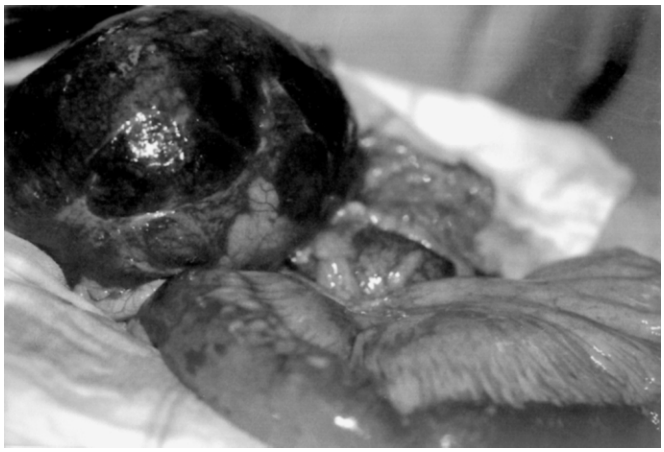


Fig. 2: An example of incipient perforation of the cecum.

scopy, performed only in 4 patients before the contrast enema.
To obtain the complete clinical results of the abdominal distension we used nasogastric suction, rectal tube and restriction of oral intake.
This was a usefull measure in 3 patients (12%).
A x-ray film confirmed the success of the conservative management.
A rapid and satisfactory clinical and radiologic decompression of the colon was obtained in 1 patient who was given only 2,5 mg of intravenous neostigmine (Prostigmina-Roche) in 100 ml of physiological salt solution for one hour.
Colonscopic decompression was performed when conservative conduct alone was not successful or when followed by drug administration.
17 patients had undergone colonscopy decompression; 9 patients required it only once and 1 patient had decompression twice to obtain a successfull result. In 7 cases the cecal diameter was not lessened, yet abdominal distension and colonic activity returned after decompression, so surgery couldn't be avoid. These patients in whom colonscopic decompression failed, had undergone, in 4 cases, a right emicolectomy and in 3 cases a V.A. right emicolectomy.
In the last 4 cases abdominal x-ray film showed an incipient of perforation of the cecum which represents an absolute indication for the surgical treatment. These patients required an extended right emicolectomy (16%) (Fig. 2) (Table IV).
The mortality rate was 4,3% and the death wasn't correlated to colonscopic decompression and yet the death proved to be attribuited to colonic disease.

Discussion

The typical patient affected by Ogilvie's syndrome suffers massive abdominal distension and has a cecal diameter greater then 9 cm with an absence of organic and mechanical obstruction of the colon. However Ogilvie's syndrome continue to perplex clinics and surgeons: the true incidence of colonic pseudo-obstruction is difficult to estimate (11, 25, 26, 27, 28), because the features of the syndrome may be unrecognized.
Morbility and mortality secondary to this condition are clearly significant Although the first patients described by Ogilvie in 1948 had abdominal cancer, it is an uncommon association with Ogilvie's syndrome. Thanks to improved knowledge of the autonomic innervation of the colon, new theories have been advanced. Most of the authors now attribute its cause to an inbalance of the autonomic system. The mechanism proposed is an interruption of pelvic parasympathetic innervation with consequent increase of sympathetic tone to the distal colon (19-29).
Other ethiologic theories attribute the syndrome to an air-fluid or "vapour" lock mechanism as a result of fluid collecting in the dependent portion of the bowel. During

any ileus, fluid accumulates in communicating loops of the bowel.
In recumbent patients, fluid stores up in the pelvic colon where it acts as an air-fluid lock. This leads to the accumulation of gas and proximal colonic distension (30).
Despite the uncertainty of the pathophysiology of Ogilvie's syndrome, many clinical conditions are associated with its development. The most frequent are: old age, chronic alcoolism, post-partum period, narcotic addition, diabetes mellitus, congestive heart failure, sepsis, trauma, laxative abuse and bad sleeping habits. In our experience we found the Olgivie's syndrome also in patients with trauma, acute cerebrovascular accident, chronic obstructive lung disease and mental retardation. This was also true of patients who had surgery.
Two patients had undergone caesarean birth, two patients hip arthroplasty and four patients who had anterior resection of the rectum (31, 32, 33, 34, 35, 36, 37).
The relationship between these events and the syndrome seems to be the traumatic manipulation of the retroperitoneum and the spinal cord (38).
The electrolyte abnormalities may play a determinting role. In our experience all patients affected by the Ogilvie's syndrome had hypokaliemia and hypocalcemia, suggesting that these are not a result, as some think, but a cause of Ogilvie's syndrome (39).
The correction of electrolyte is determinating for the success of the conservative management. We reported two cases of Ogilvie's syndrome in drug abusing patients. The phenothiazine in particular are parasympatholitic agents, and consequentely may be responsible of colonic pseudo-obstruction (40, 41, 42, 43).
The diagnosis is established by features of the history, physical signs and gaseous distension of the large bowel, demonstrated on plain x-ray films. Since the radiographic features are difficult to distinguish from other conditions, such as cecal volvolus, we have always performed colonscopy to resolve the problem. In five cases we combined a contrast enema (44, 45, 46) with the colonscopy The colonscopy has the advantages of excluding mechanical factors and also allowing therapeutic decompression of the colon (47).
With the increasing awareness of the syndrome and improved endoscopic techniques, Ogilvie's syndrome is being successively treated without surgery in a large percentage of cases (48, 49, 50).
Once the diagnoses is confirmed and there are no signs of cecal perforation, management is essentially conservative It is always continued far almost 48 hours. We administer balanced electrolyte and fluids ensuring adequate oxygenation of the patients.
At the present lime, colonscopic decompression is the main-stay of treatment of colonic pseudo-obstruction. It reduces cecal pressure and wall tension, thus reducing the likelihood of perforation (52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65).
The 57% of our patients were effectively treated by colonscopic decompression and needed no further intervention. There weren't complication or death related to colonscopic. This approach is well tollerated by most patients and should decrease the incidence of recurrence.
Operative interventions are indicated for patients in whom colonscopy decompression has failed. Also if we suspect ischemic bowel or cecal perforation (66).
Operative intervention is absolutely necessary in the presence of pneumoperitoneum or development of cecal tenderness. Surgical options include laparotomic and laparoscopic cecostomy or right hemicolectomy with ileostomy (67).
In literature several Authors have performed cecostomy as an essential operation in Ogilvie's syndrome when conservative measures have failed. We disagree with this surgical conduct and we prefer to perform a right emicolectomy with eventual protective ileostomy when we suspect an incipient cecal perforation. The results obtained are encouraging.
Cecostomy is in our opinion an operation that often is unresolvable and causes serious hydroelectrolytic unbalances. Performance of right emicolectomy has been successful in our cases and has been determinating in the resolution of the syndrome.
The treated patients have had no complications. Not in any cases we made a protective ileostomy also neither in the fear of an incipient cecal perforation.
Right emicolectomy has become a safe operation in Ogilvie's syndrome. In our cases we performed righ t emicolectomy also by laparoscopic V.A. tecnique and had no complications.
The prognosis is excellent if correct diagnoses and appropriate treatment afe instituted before cecum perforation, which carries a reported mortality rate of 25-60%. Morbility and mortality rates for routine non emergent colonscopic decompression are respectively less than 3% and 1%. These rates increase when the decompression is performed in emergency, due to the fact that the bowel is imprepared and the clinical conditions of the patients are severe.
These factors are reported to affect the risk of mortality: patient age, cecal diameter and all delay in decompression.

References

1) Ogilvie H.: *Large intestine colic due to sympatheric denervatio: a new clinical syndrome*. Br Med J, 1948; 2:671.

2) Stephenson B.M., Morgan A.R., Salaman J.R., Wheeler M.H.: *Ogilvie's syndrome: a new approach to an old problem*. Dis Colon Rectum, 1995; 38:424-7.

3) Dorudi S., Berry A.R., Kettlewell M.G.: *Acute colonic pseudo-obstruction.* Br J Surg, 1992; 79:99-103.

4) Wegener M., Borsch G.: *Acute colonic pseudo-obstruction*

(Ogilvie's syndrome). Presentation of 14our owns cases and analysis of 1027 cases reported in literature. Surg Endosc, 1987; 1:169-74.

5) Jetmore A.B., Timmcke A.E., Gathright J.B.: *Ogilvie's syndrome: colonscopic decompression and analysis of predisposing.* Dis Colon Rectum, 1992; 35:113542.

6) Spira I.A., Rodrigues R., Wolff W.: *Pseudo-ostruction of the colon*. Am J Gastroenterol, 1976; 65:397-408.

7) Vanek V. W., Al-Salti M.: *Acute pseudo-obstruction of the colon (Ogilvie's syndrome)*. Dis Col Rectum, 1986; 29:203-10.

8) Bachulis B.L., Smith P.E.: *Pseudo-obstruction of the colon*. Am J Surg, 1978; 136:66-72.

9) Attiyeh F.F., Knapper W.K.: *Pseudo-obstruction of the colon (Ogilvie's syndrome).* Dis Colon Rectum, 1980; 23:106-8.

10) Geelhoed G.W.: *Colonic pseudo-obstruction in surgical patients*. Am J Sur, 1985; 149:258-65.

11) Pancaldi R., Balducci D., Postiglione V., Lippa M., Tonni M.P., Morandi O., Diana D.R., Bruni G.C.: *La sindrome di Ogilvie: é da ridefinire?* Minerva Chir, 1994; 49:1317-23.

12) Giammanco M.: *Ogilvie's sindrome: a clinical case report*. Minerva Chir, 1997; 52:655-7.

13) Donadio F., La Ganga V., Ponzio P. et al.: *La sindrome di Ogilvie*. Minerva Chir, 1981; 36:261-6.

14) Galasse S., Giangiuliani G., Alimandi L., Caracciolo F.: *Trattamento della pseudostruzione del colon: nostra casistica e revisione della letteratura*. Chir Gastroenterol, 1989; 22:298-305.

15) Givanardi G., Rustichelli S., *La sindrome di Ogilvie*. Riv It Colproct, 1989; 8:88-91.

16) Leoni G., Bonavina R., Sandei F., Pescarini L.: *Pseudostruzione acuta del colon (sindrome di Olgivie)*. Riv It Colproc, 1989; 8:83-7.

17) Nano M., Ricci E.: *La malattia di Ogilvie*. Arch Atti Soc It Chir, 1990; 1:219-31.

18) Papadia A., Vitale G., Gentile G.: *Sindrome di Ogilvie*. Riv It Coloproct, 1989; 8:9-18.

19) Finco C., Zaninotto G., Pittoni G., Costantini M.: *La pseudoostruzione intestinale cronica idiopatica*. Minerva Chir, 1991; 46:747-53.

20) Spoletini F., Marchese A., Mustacciuoli G., Scutari F.: *La sindrome di Ogilvie: contributo clinico*. Chir Gen-Gen Surg, 1987; 8:375-7.

21) Krige J.E., Hudson D.A., Kottler R.E. *Acute colonicpseudoobstruction: current diagnosis and managment*. S Afr Med, 1989; 75:271.

22) Nanni G., Garbini A., Lucchetti P. et al.: *Ogilvie's syndrome: review. Of the literature (October '48 to March '80) and report of four aditional cases*. Dis Colon Rec, 1982; 25:187.

23) Stephenson B.M., Morgan A.R., Drake N., Salaman J.R., Wheeler M.H.: *Parasympathomimetic decompression of acute colonic pseudo-obstruction*. Lancet, 1993; 342:1181-2.

24) Kukora J.S., Dent T.L.: *Colonscopic decompression of massive nonobstructive caecal dilation*. Arch Surg, 1977; 112:512-7.

25) Brigli G., Doria F.E., Sommariva S., et al.: *Sindrome di Ogilvie: così rara?* Minerva Chir, 1989; 44:1147-9.

26) DeSantis G., Listrani F., Pancotti G.: *Sindrome di Ogilvie?* Minerva Chir, 1985; 40:1353-5.

27) Morosini M., Sommo M., Delpiano C., Baldinetti R., Angarano G., Donadio F.: *La sindrome di Ogilvie: realtà clinica o errore nosografico?* Ann Ital Chir, 1991; LXIII:483-87.

28) Soreide O., Bjerkeset T.B., Fossal G.E.: *Pseudo obstruction of the colon: a genuine clinical condition*. Dis Col Rectum, 1977; 20:487-93.

29) Longo W.E., Ballantyne G.H., Modlin I.M.: *The colon, anorectum and spinal cord patient: a review of the functional alterations of the denervated hindgut*. Dis Colon Rectumt, 1989; 32:261-7.

30) Singleton A.O.Jr., Wilson M.: *Air-fluid obstruction of the colon.* South Med, 1967, 60:909-13.

31) Ravo B.: *Pseudo-obstruction of the colon following caesarean section*. Dis Colon Rectum, 1983; 26:440.

32) Rodriguez-Ballesteros R., Torres-Bautista A.: *Ogilvie's syndrome in the postcesarean section patient*. Int J Gynecol Obstet, 1989; 28:185-7.

33) Lindsey T.M., Lea Braun O., Carrasco A., Poulos E.: *Pseudoobstruction of the colon, as a postpartum complication: case report*. Texas Medicine, 1978; 74:56.

34) Robbins R.D.: *Colonic decompressive cecal dilatation secondary to caesarean section*. Am J Gastroenterol, 1982; 77:231.

35) Hubbard C.N., Richar.dson E.G.: *Pseudo-obstruction of the colon. A prospective complication in orthopaedic patients*. J Bone Joint Surg Am, 1983; 65:226-9.

36) Moore C.E., Koman G.M.: *Impending cecal perforation secondary to a crushing injury of the pelvis*. Arch Surg, 1959; 79:1044-6.

37) Clarke H.D., Berry D.J., Larson D.R.: *Acute pseudo-obstruction of the colon as a postoperative_complication of hip arthroplasty*. J Bone Joint Surg, 1997; 79:1642-7.

38) Feldman R.A., Karl R.C.: *Diagnosis and treatment of Ogilvie's syndrome after lumbar spinal surgery*. J Neurosurg, 1992; 76:1012-6.

39) Muggia A.L.: *Perforation of the cecum associated with hipokaliemic ileus*. Am J Gastroenterol, 1972; 57:169-7l.

40) Geelhoed G., Joseph W.L.: *Surgical sequelae of drug abuse*. Surg Gynecol Obstet, 1974; 139:749-55.

41) Ohri S.K., Patel T., Desa L., Spencer J.: *Drug-induced colonic pseudo-obstruction; report of a case*. Dis Colon Rectum, 1991; 34:346-50.

42) Stieger D.S., Cantieni R., Frutiger A.: *Acute colonic pseudoobstruction (Ogilvie's syndrome) in two patients receiving high dose clonidine for delirium tremens*. Intensive Care Med, 1997; 23: 780-2.

43) Pecha R.E., Mervyn D. Danilewitz: *Acute pseudo-obstruction of the colon (Ogilvie's syndrome) resulting from combination tocolytic therapy*. AJG, 1996; 14:1265-6.

44) Quan-Yang Duh, Lawrence W. Way: *Diagnostic laparoscopy and laparoscopic cecostomy .for colonic pseudo-obstruction.* Dis Colon Rectum, 1993; 65-9.

45) Chapman A.H., McNamara M., Porter G.: *The acute contrast enema in suspected latge bowel obstruction: value and treatment*. Clin Radiol, 1992; 46:273-8.

46) Stewart J., Finan P.J., Courtney D.F., Brennan T.G.: *Does a water soluble contrast enema assist in the management of acute large bowel obstruction: a prospectiv study of 117 cases*. Br J Surg, 1984; 71:799-80l.

47) Strodel W.: *Therapeutic and diagnostic colonscopy in non obstructive colonic dilatation*. Ann Surg, 1983; 197:416.

48) Walter E. Longo, Anthony M., Vernava III: *Prokinetic agents for lower gastrointestinal motility disorders*. Dis Colon Rectum, 1993; 696-707.

49) Maglinte D.D.T., Stevens L.H., Hall R.C., Kelvin F.M., Micon L.T.: *Dual-purpose tube for enteroclysi s and nasogastric-nasoenteric decompression*. Radiolog, 1992; 185:281-2.

50) Rovira A., Lopez A., Cambray C., Gimeno C.: *Acute colonic pseudo-obstruction (Ogilvie's syndrome) treated with erytromycin.* Intensive Care Med, 1997; 798.

51) Turegano-Fuentes F., Munoz-Jimenez F., Del Valle-Hemandez E., Perez-Diaz D., Calvo-Serrano M., DeTomas J., De Fuenmayor M.L., Quintas-Rodriguez A.: *Early resolution of Ogilvie's_ syndrome with intravenous neostigmine: a simple, effective treatment*. Dis Colon Rectum, 1997; 40:1353-7.

52) Fiorito J.J., Schoen R.E., Brandt L.J.: *Pseudo-obstruction associated with colonic ischemia: successful management with colonscopic decompression*. Am J Gastroenterol, 1991; 86:1472.

53) Bode W.E., Beart R..W., Spencer R.G., Culp C.E, Wolff B.G., Taylor B.M.: *Colonscopic d decompression for acute pseudo-obstruction of the colon (Ogilvie's syndrome): report of 22 cases and review of the literature*. Am J Surg, 1984; 147:243-5.

54) Nivatvongs S.S., Vermeulen J.D., Fang D.T.: *Colonoscopic decompression of acute pseudo-obstruction of the colon*. Ann Surg, 1982; 196:598-600.

55) Sariego J., Matsumoto T., Kerstein M.: *Colonscopically guided tube decompression in Ogilvie's syndrome*. Dis Colon Rectum, 1991; 34:720-2.

56) Nano D., Prindiville T., Pauly M., Chow H., Ross K., Trudeau W.: *Colonscopic terapy of acute pseudo-obstruction of the colon*. Am J Gastroenterol, 1987; 82:145-8.

57) Burke G., Shellito P.C.: *Treatment of recurrent colonic pseudo-obstruction by endoscopic placement of a fenestrated overtube: a report of a case*. Dis Colon Rectum, 1987; 30:615-9.

58) Wile-Jorgensen P.A., Luke M.L.: *Endoscopic treatment of acute colonic pseudoobstruction*. Ugeskr Laeg, 1989; 151:635.

59) Van Gossum A., Borgeuois F., Gay F., Lievens P.: *Operative colonscopic endoscopy*. Acta Gastroenterol Bel, 1992; 55:314-26.

60) Nakhgerany K.B.: *Colonscopic decompression of the colon in patients with Ogilvie's syndrome*. Ann J Surg, 1984; 148:317.

61) Nivatuongs S.: *Colonscopic decompression of acute pseudo-obstruction of the colon*. Ann Surg, 1982; 16:598.

62) Gosche J.R., Sharpe J.N., Larson G.M.: *Colonscopic decompression for pseudo-obstruction of the colon*. Am Surg, 1989; 55:111.

63) Groff W.: *Colonscopic decompression and intubation of the cecum for Ogilvie's syndrome*. Dis Col Rectum, 1983; 26:505-6.

64) Smektala R., Boddeker W., Haarman W.: *Therapeutic and diagnostic colonscopy as emergency treatment of acute pseudobstruction of the large bowel*. Coloproctology, 1990; 1:14-8.

65) Henry M.J.: *Management of Ogilvie's syndrome*. Gastrointest Endo, 1997; 45:54.

66) Leborgne J., Pannier M., Le Neel J.C.: *Perforation ducoecum, complication d'une dilatation aigue idiopatique du colon ou syndrome de Ogilvie. Interet pratique dequelques donnees patogeniques*. Ann Chir, 1978; 32:187.

67) Duh Q.Y., Way L.W.: *Diagnostic laparoscopy and laparoscopic cecostomy for colonic pseudo-obstruction*. Dis Colon Rectum, 1993; 36:65-70.

Autore corrispondente:

Paolo CARCOFORO, MD
Department of General Surgery,
University of Ferrara,
Corso della Giovecca 203,
44100 - Ferrara, ITALY
Tel.: +39 0532/236385
Fax: +39 0532/207653