

Early View Article: Online published version of an accepted article before publication in the final form.

Journal Name: Journal of Case Reports and Images in Obstetrics and Gynecology

Type of Article: Case Report

Title: Post caesarean section acute colonic Pseudo-Obstruction (Ogilvie's Syndrome): Case report and review of literature

Authors: Dr. W Carlino, Mr. H Hanna, Mr. O Eskandar

doi: To be assigned

Early view version published: June 12, 2017

How to cite the article: W Carlino, H Hanna, O Eskandar. Post caesarean section acute colonic Pseudo-Obstruction (Ogilvie's Syndrome): Case report and review of literature. Journal of Case Reports and Images in Obstetrics and Gynecology. Forthcoming 2017.

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5

6 **AUTHORS:**

7 Dr. W Carlino¹, Mr. H Hanna², Mr. O Eskandar³

8

9 **AFFILIATIONS:**

10 ¹Department of Obstetrics and Gynaecology, North Devon District Hospital,
11 Barnstaple, Devon, EX31 4JB, wcarlino@nhs.net

12 ²Department of Obstetrics and Gynaecology, North Devon District Hospital,
13 Barnstaple, Devon, EX31 4JB, Hanna.hanna@nhs.net

14 ³Department of Obstetrics and Gynaecology, North Devon District Hospital,
15 Barnstaple, Devon, EX31 4JB, oeskandar@yahoo.com

16

17 **CORRESPONDING AUTHOR DETAILS**

18 Mr. Osama ESKANDAR FRCOG - MFSRH

19 Department of Obstetrics and Gynaecology, North Devon District Hospital,
20 Barnstaple, Devon, EX31 4JB, UK

21 Email: oeskandar@yahoo.com

22

23 **Key Words:** Post Caesarean Ogilvie's Syndrome

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25 **Guarantor of Submission:** The corresponding author is the guarantor of
26 submission.

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34

35 **ABSTRACT**

36

37 **Introduction**

38 Acute colonic pseudo-obstruction (ACPO), also known as Ogilvie's syndrome (OS) is
39 a condition characterized by massive colonic distension in the absence of
40 mechanical obstruction. In female patients it has an association with caesarean
41 section. OS is a rare and therefore infrequently reported condition. However it can be
42 associated with serious morbidity and mortality.

43

44 **Case Report**

45 A 33 year old patient developed OS quickly after an emergency caesarean section.
46 She was managed conservatively with a prokinetic (drug which enhances
47 gastrointestinal motility) following confirmation of an acute colonic pseudo-
48 obstruction on CT scan and she made a full recovery.

49

50 **Conclusion**

51 Mortality rates from OS are quoted as between 36-50% when bowel perforation or
52 ischemia develops. Clinicians should be aware that ACPO can complicate
53 caesarean sections. Mechanical obstruction should be excluded by radiological
54 imaging including x-ray and CT scan. A prompt management plan should be in place
55 and we suggest a logarithm to manage such cases. This case illustrates the
56 importance of early diagnosis and management as well as effective communication
57 between the surgical and obstetric team.

58

59 **Keywords:** Post Caesarean Ogilvie's Syndrome

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64 Syndrome): Case report and review of literature

65

66 **INTRODUCTION**

67 We present a case of Ogilvie's syndrome (OS) following emergency caesarean
68 section. This condition can be associated with serious morbidity and mortality. It
69 typically occurs following a severe illness or surgery, recent cardiac events and can
70 be associated with metabolic imbalances and underlying infection.

71 This case was managed conservatively with a prokinetic (drug which enhances
72 gastrointestinal motility) following confirmation of an acute colonic pseudo-
73 obstruction on CT scan and she made a full recovery.

74 We highlight the significance of the ACPO particularly postoperatively after
75 caesarean Section. Clinicians should be aware of the condition to enable them to put
76 a prompt management plan. We suggest a logarithm to manage such cases (Figure
77 3). This case illustrates the importance of early diagnosis and management as well
78 as effective communication between the surgical and obstetric team.

79

80 **CASE REPORT**

81 A 33 year old, primiparous woman who was admitted at 39⁺² weeks gestational age
82 with pregnancy induced hypertension (PIH). The pregnancy had previously been
83 unremarkable. Her bloods on admission revealed decreasing hemoglobin (98 g/l)
84 and platelets (114¹⁰⁻⁹/l) but normal liver function tests (LFTs). There was no evidence
85 of proteinuria on her urine dip. The PIH was initially managed with labetalol. The
86 following day an induction of labor was commenced with PROPESS (Dinoprostone
87 vaginal delivery system). Following a labor complicated by failure to progress and an
88 acute kidney injury (AKI) the Creatinine was 154umol/L and eGFR was 38.5 with
89 oliguria, a grade II emergency caesarean section was performed. The caesarean
90 section was uncomplicated and uneventful. A live 3370g female infant was delivered
91 with no subsequent complication.

92 Following delivery the mother developed a low grade temperature of 37.5 °C and
93 was managed as a possible maternal sepsis with Meropenem 500mg IV QDS and

94 clindamycin 600mg IV QDS. In light of her prior AKI, her fluid balance was also
95 carefully monitored.

96 After 10 hours post-partum the mother developed gross abdominal distension and an
97 inability to pass flatus. On examination her temperature remained mildly elevated at
98 37.5 °C, a respiratory rate of 23/min, oxygen saturations was 96% on air and she
99 was tachycardiac at 108/min. Her blood pressure was stable. Her abdomen was
100 tense and distended with sluggish bowel sounds. It was planned to carefully observe
101 her and permit clear fluids orally. 24 hours later she began feeling much better but
102 her abdomen remained distended with no flatus passed. She was passing good
103 volumes of urine and her kidney function was returning to normal.

104 The abdominal distension persisted into day 2 post-partum at which point she began
105 vomiting. She was made nil by mouth, a nasogastric tube (NGT) was sited, an
106 abdominal x-ray (AXR) was performed (Fig.1) and a surgical consultation requested.
107 The AXR showed marked gaseous distension of both the small and large bowel.

108 A CT scan was subsequently performed (Fig. 2) which showed dilated colon to the
109 level of the sigmoid colon. The patient managed with a prokinetic metoclopramide
110 and was given 2 units of packed red blood cells which significantly improved her
111 condition. 24 hours later the patient begun passing flatus and her bowels opened.
112 The patient self- discharged four days later.

113

114 DISCUSSION

115 Acute colonic pseudo-obstruction (ACPO) which is also known as Ogilvie's
116 syndrome is characterized by acute colonic dilatation in the absence of any
117 identifiable mechanical cause for bowel obstruction. It typically occurs following a
118 severe illness or surgery, recent cardiac events and can be associated with
119 metabolic imbalances and underlying infection [1, 2].

120 In a large, retrospective series that included 400 patients with ACPO, non-operative
121 trauma, infection, and cardiac disease were most commonly implicated [1]. However
122 a more recent review reported cesarean section and hip surgery as being the
123 procedures most commonly associated with ACPO.

124 OS normally affects the cecum and right hemicolon, although occasionally colonic
125 dilation extends to the rectum. The exact mechanism which causes the colonic

126 dilatation is unknown however the association documented with trauma, spinal
127 anesthesia and pharmacological agents suggests impaired autonomic nervous
128 system (ANS) function. It is well recognized that an impairment of the
129 parasympathetic fibers from S2-4 results in an atonic distal colon and proximal bowel
130 obstruction [1,3]. Despite this, there is no postulated mechanism to convincingly
131 explain colonic dilation in those patients without obvious involvement of the
132 parasympathetic nerves.

133 An increasing colonic diameter predisposes to a rise in tension on the colonic wall. If
134 left untreated there is an increasing risk of colonic ischemia and perforation. The risk
135 of perforation becomes significant when colonic diameter exceeds 10 to 12 cm or
136 when the distension has been present for greater than six days [4]. The duration of
137 dilation is probably more important than the absolute diameter of the colon [5,6].

138 The diagnosis of ACPO should be suspected in at risk patients with abdominal
139 distension or pain and a physical examination that reveals a distended and tympanic
140 abdomen. The diagnosis of ACPO can formally be established with abdominal
141 imaging.

142 Although abdominal radiographs are frequently a first line investigation and
143 demonstrate dilated colon, often from cecum to the splenic flexure and sometimes to
144 the rectum, the radiographic findings are not specific. As such, abdominal computed
145 tomography (CT) is the imaging modality of choice as it facilitates differentiating
146 ACPO from a mechanical obstruction.

147 The aim of management is to decompress the colon and consequently minimize the
148 risk of colonic ischemia, perforation and mortality [1].

149 The initial management in patients without evidence of perforation and colonic
150 distension less than 12cm is conservative. This may involve a trial of bowel rest,
151 NGT decompression, and rectal tube placement. All patients should also have any
152 underlying correctable causes addressed such as electrolyte imbalances, treatment
153 of underlying infection and discontinuation of opioid analgesia. Blood transfusion can
154 be helpful in improving the condition as it helps to correct the underlying electrolyte
155 imbalance identified as an underlying cause for OS.

156 Successful resolution is achieved in 83% to 96% of patients within 2 to 6 days of
157 initiating therapy [1]. Due to the potential risk of perforation, patients ACPO should

158 be actively observed with serial physical examinations, and laboratory investigations
159 including full blood count and electrolytes [6]. In addition it has been advocated to
160 evaluate colonic diameter using abdominal radiographs every 12 to 24 hours [6].
161 Typically conservative therapy should be employed for 24 to 48 hours unless the
162 patient demonstrates clinical deterioration or increasing caecal distension beyond 12
163 cm [7].

164 In patients who have failed 24 to 48 hours of conservative management,
165 pharmacological therapy should be considered. Pharmacologic therapy is directed
166 towards counteracting the sympathetic-parasympathetic imbalance associated with
167 ACPO. The pharmacological therapy with the best evidence base is neostigmine.
168 Neostigmine is a reversible anticholinesterase inhibitor that increases synaptic levels
169 of acetylcholine. As such neostigmine can work to enhance the transmission of
170 action potentials in muscles and thus enable muscle fibers to function more
171 effectively [7]. A number of prospective studies support the efficacy of neostigmine in
172 treating ACPO [8]. Patients had improvement in symptoms with only occasional mild
173 side effects. The reported side effects included sweating and transient bradycardia.

174 Although recurrences were rare, they were reported in up to a third of patients.

175 Although pro-kinetics have been employed to treat ACPO, there is no convincing
176 scientific evidence to underpin this practice. However, cases utilizing erythromycin,
177 metoclopramide, and cisapride have been reported [5, 8].

178 If patients do not respond to neostigmine or indeed have contraindications to it,
179 colonoscopic decompression can be performed. This is an effective procedure which
180 has been demonstrated to decrease caecal diameter in 73% to 100% of cases [9].

181 Despite this recurrence rates of between 0% to 65% have been reported [9,10,11].

182 In groups of patients with a reported recurrence, repeat decompression was
183 achieved in 56% to 87% but with higher rates of subsequent caecal distension [1,9]

184 If patients do not respond to other pharmacological therapy or colonic
185 decompression, a limited laparotomy and caecostomy can be performed. However
186 the major advantage of endoscopic decompression is that mortality rates are
187 reported as between 1% to 5% compared with 12% to 20% for caecostomy [10].

188

189

190 CONCLUSION

191 In conclusion, clinicians should be aware that ACPO can complicate caesarean
192 sections. Mechanical obstruction should be excluded by radiological imaging
193 including x-ray and CT scan. A prompt management plan should be in place and we
194 suggest a logarithm to manage such cases (Fig 3). After excluding mechanical
195 causes, ACPO should be thought and can be managed initially conservatively which
196 is successful in the majority of cases. However, surgical management can be
197 indicated in resistant cases.

198

199 CONFLICT OF INTEREST

200 The authors report no conflicts of interest

201

202 AUTHOR'S CONTRIBUTIONS

203 All authors are involved in this case report and in searching and writing up the case
204 report.

205

206 REFERENCES

- 207 1. Vanek VW, Al-Salti M. Acute pseudo-obstruction of the colon (Ogilvie's
208 syndrome). An analysis of 400 cases. *Dis Colon Rectum* 1986; 29:203-10.
- 209 2. Geller A, Petersen B T, Gostout C J. Endoscopic decompression for acute
210 colonic pseudo-obstruction. *Gastrointest Endosc.* 1996; 44:144–150.
- 211 3. Johnston G, Vitikainen K, Knight R, et al. Changing perspective on
212 gastrointestinal complications in patients undergoing cardiac surgery. *Am J*
213 *Surg* 1992; 163:525.
- 214 4. Ogilvie WH. William Heneage Ogilvie 1887-1971. Large-intestine colic due to
215 sympathetic deprivation. A new clinical syndrome. *Dis Colon Rectum* 1987;
216 30:984.
- 217 5. Saunders MD. Acute colonic pseudo-obstruction. *Best Pract Res*
218 *ClinGastroenterol* 2007; 21:671.
- 219 6. Sloyer AF, Panella VS, Demas BE, et al. Ogilvie's syndrome. Successful
220 management without colonoscopy. *Dig Dis Sci* 1988; 33:1391.

- 221 6. Johnson CD, Rice RP, Kelvin FM, et al. The radiologic evaluation of gross
222 cecal distension: emphasis on cecal ileus. *AJR Am J Roentgenol* 1985;
223 145:1211.
- 224 7. 13. Maloney N, Vargas H. Acute intestinal pseudo-obstruction. (Ogilvie
225 syndrome) .*Clin Colon Rectal Surg.* 2005; (2): 96–101.
- 226 8. Turego-Fuentes F, Munoz-Jiminez F, Del Valle-Hernandez E, et al. Early
227 resolution of Ogilvie's syndrome with intravenous neostigmine. *Dis Colon*
228 *Rectum.* 1997; 40:1353–1357.
- 229 9. MacColl C, MacCannell K L, Baylis B, Lee S S. Treatment of acute colonic
230 pseudoobstruction with cisapride. *Gastroenterology.* 1990; 98:773–776.
- 231 10. Gosche J R, Sharpe J N, Larson G M. Colonoscopic decompression for
232 pseudo-obstruction of the colon. *Am Surg.* 1989; 55:111–115.
- 233 11. Bode W E, Beart R W, Spencer R J, Culp C E, Wolff B G, Taylor B M.
234 Colonoscopic decompression for acute pseudo-obstruction of the colon
235 (Ogilvie's syndrome) *Am J Surg.* 1984; 147:243–245.

236

237 **FIGURE LEGENDS**

238

239 Figure 1: AXR demonstrating marked gaseous distension of both small and large
240 bowel.

241 Figure 2: CT scan showing extensive bowel distension

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243 Figure 3: Algorithm of management of post-Caesarean section acute abdominal
244 distension

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253 **FIGURES**

254

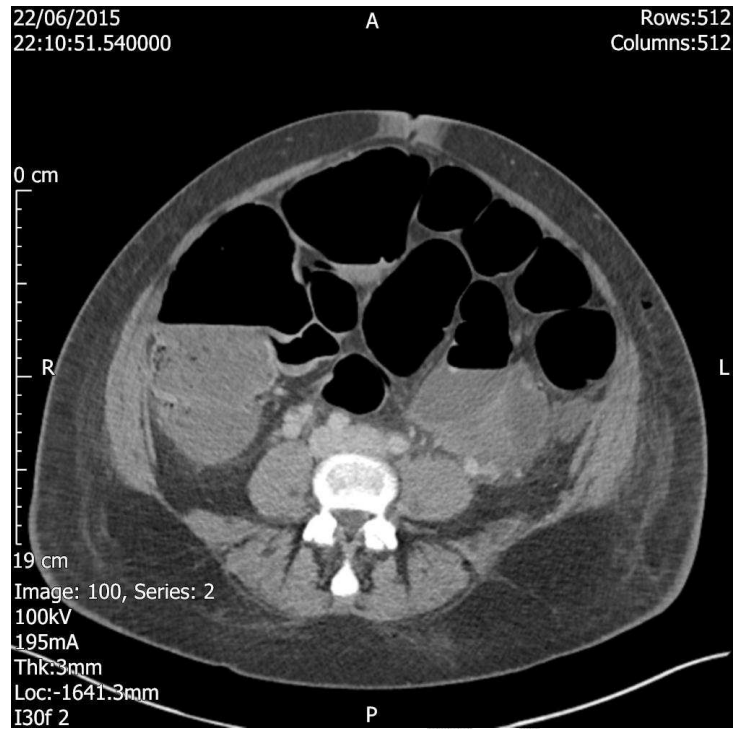


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257 Figure 1: AXR demonstrating marked gaseous distension of both small and large
258 bowel.

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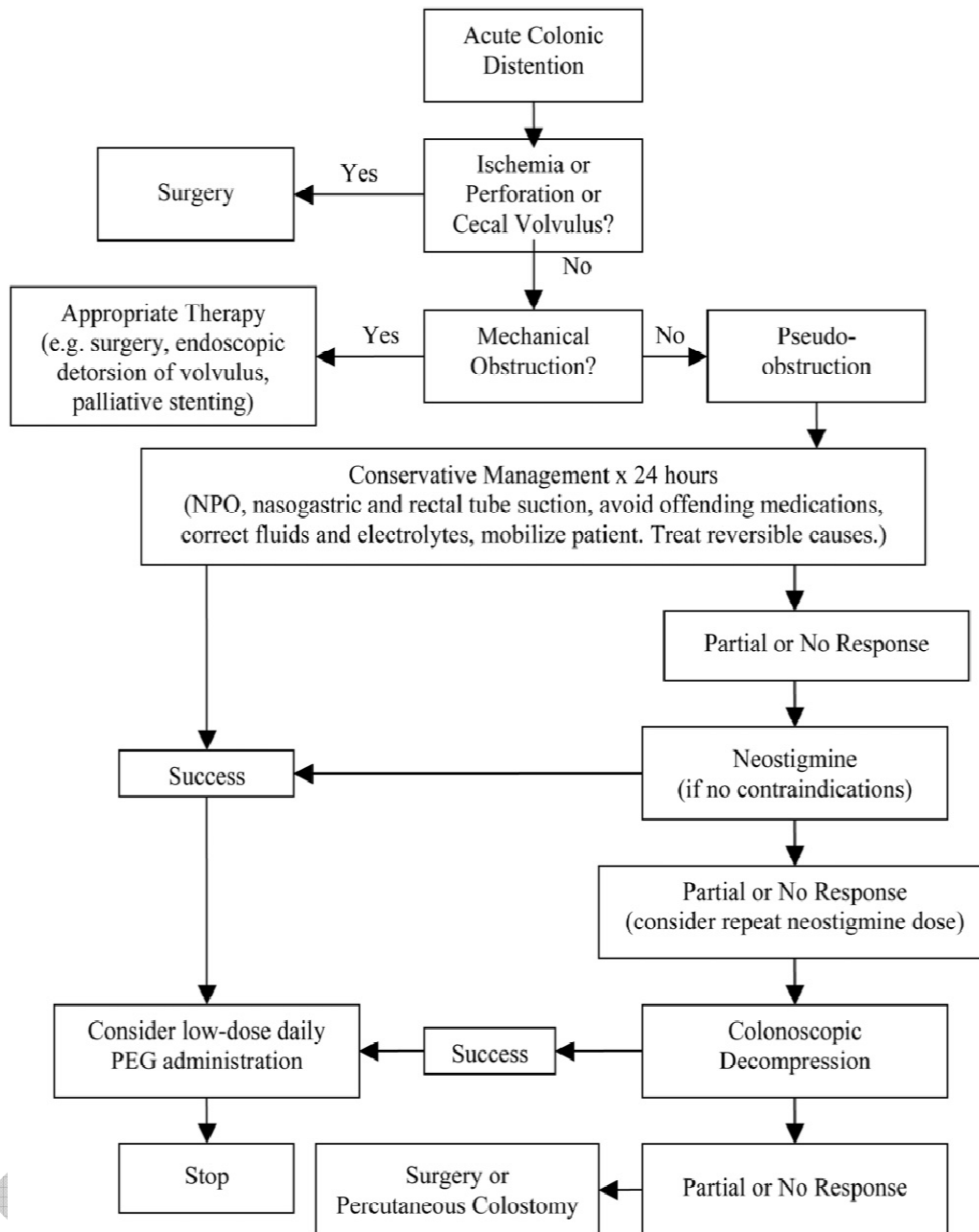


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262 Figure 2: CT scan showing extensive bowel distension

EARLY VIEW



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264

265 Figure 3: Algorithm of management of post-Caesarean section acute abdominal
266 distention

267 NPO: nil per os (nothing by mouth)

268 PEG: Polyethylene Glycol, laxative