

Ogilvie's Syndrome as a Rare Complication of Lumbar Disc Surgery

Hakan Caner, Murad Bavbek, Ahmet Albayrak, Tarkan Çalisaneller Nur Altinörs

ABSTRACT: Background: In this study we report a rare complication after lumbar surgery, Ogilvie's syndrome, that presents as acute colonic dilatation in the absence of mechanical obstruction. **Case:** A 43-year-old obese woman underwent lumbar surgery for L4-L5 lumbar disc herniation. The patient complained of persistent abdominal distention and lack of bowel sounds. Plain radiography and ultrasonography revealed massive dilatation of the colon. Nasogastric aspiration was initiated and all analgesic drugs were withdrawn. Abdominal distention gradually disappeared within three days. **Conclusions:** Only three cases of Ogilvie's syndrome following lumbar spinal surgery have been reported in the literature. In our case obesity, chronic constipation, and narcotic drugs were the most likely precipitating causes. Ogilvie's syndrome may resolve with conservative treatment, but if the cecal diameter continues to increase, colonoscopy or laparotomy may be needed to prevent perforation of colon.

RÉSUMÉ: Le syndrome d'Ogilvie, une complication rare de la chirurgie discale lombaire: à propos d'un cas. Introduction: Nous rapportons une complication rare suite à une chirurgie lombaire, le syndrome d'Ogilvie, qui se manifeste par une dilatation aiguë du colon en l'absence d'obstruction mécanique. Description de cas: Il s'agit d'une patiente obèse de 43 ans qui a subi une chirurgie pour hernie discale au niveau de L4-L5. La patiente s'est plainte de distension abdominale persistante et d'une absence de bruits intestinaux. La radiographie simple et l'ultrasonographie ont révélé une dilatation massive du colon. Suite à l'aspiration nasogastrique et au retrait de tous les analgésiques, la distension abdominale est disparue progressivement en 3 jours. Conclusion: Seulement trois cas de syndrome d'Ogilvie suite à une chirurgie spinale lombaire ont été rapportés dans la littérature. Chez notre cas, l'obésité, la constipation chronique et les narcotiques étaient les causes précipitantes les plus probables. Le problème peut se résoudre avec le traitement conservateur, mais si le diamètre coecal continue d'augmenter, il peut être nécessaire de procéder à une colonoscopie ou à une laparotomie afin de prévenir la perforation du colon.

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Ogilvie's syndrome is a disorder of the gastrointestinal tract that is characterized by acute colonic dilatation in the absence of mechanical obstruction.^{1,2} Numerous conditions predispose to Ogilvie's syndrome, and, without prompt diagnosis and treatment, the potential for cecal perforation makes it life-threatening. A review of the literature shows that this syndrome has very seldom been reported in association with lumbar spinal surgery.³ Here we describe a case of Ogilvie's syndrome that developed after lumbar disc surgery.

CASE REPORT

A 43-year-old woman complained of back and left leg pain, from the posterior hip along the posterolateral thigh, with numbness and tingling into the big toe. On neurological examination, the Lasègue test was positive at 10 degrees, the strength of the extensor muscle of left big toe was diminished and there was hyperalgesia of the dorsal foot. Lumbar magnetic resonance imaging revealed L4-L5 lumbar disc herniation with left-sided extrusion. The patient had no history of preoperative medical illness except for chronic constipation, and she had undergone no surgery. Physical examination was normal apart from obesity (body

weight 95 kg). A L4 hemilaminotomy and L4-L5 discectomy and foraminotomy were performed. The surgery was not associated with additional neurological deficits, postoperative bladder dysfunction, or leg pain. The first two postoperative days were uneventful, but bowel sounds were absent. As a result, nothing was given by mouth. By the third postoperative day, the patient's persistent abdominal distention and lack of bowel sounds prompted further investigation. Plain radiography revealed massive dilatation of the colon (11.5 cm in diameter). In order to rule out operative-related ureter or bowel injury, intravenous pyelography and abdominal ultrasonography were performed and were normal, except for bowel distention. Lumbar magnetic resonance imaging indicated normal postoperative findings without a hematoma. Nasogastric aspiration was initiated and all analgesic drugs were withdrawn. In the following three days, abdominal radiographs were

From the Baskent University Faculty of Medicine, Department of Neurosurgery, Ankara, Turkey.

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Reprint requests to: Hakan Caner, Baskent University Faculty of Medicine, Department of Neurosurgery, Bahçelievler 06940, Ankara, Turkey

taken daily and the patient's cecal diameter was measured. This diameter never reached 12 cm, reported as a critical size for perforation and, as a result, colonoscopy was not considered as additional treatment. Within these 3 days the patient's pain and abdominal distention gradually disappeared. A double-contrast barium enema of the colon did not identify an obstructive lesion.

DISCUSSION

Acute colonic dilatation in the absence of mechanical obstruction was first described by Ogilvie in 1948.⁴ This syndrome, also known as pseudo-obstruction of the colon, is characterized by massive cecal distention.^{1,3} Ogilvie's syndrome is most often seen in hospitalized elderly patients that have several medical or surgical conditions^{5,6} and typically occurs in critically ill or postoperative cases.^{5,7} The pathogenesis is unknown but is thought to involve an imbalance of sympathetic and parasympathetic colonic innervation.¹ Sacral parasympathetic nerves S2 to S4 supply the lower gastrointestinal trunk distal to the splenic flexure, and interruption of these nerves secondary to pelvic surgery or trauma can be associated with Ogilvie's syndrome.^{8,9} Orthopedic joint surgery and cesarean section seem to be the most common operative procedures linked with this condition.^{6,7}

The literature reports only three cases of Ogilvie's syndrome following lumbar spinal surgery.¹⁰ The most common medical problems associated with Ogilvie's syndrome are sepsis, neurological dysfunction, and certain cardiac or respiratory disorders.¹¹ Other possible etiologies are inhibition of gastrointestinal hormones which, under the control of the neurohypophysis, contribute to colon motility. This theory is supported by the fact that somatostatin and octreotide have been used successfully to treat the disorder.¹² In addition, narcotics, tricyclic anti-depressants, phenothiazines, anti-Parkinsonian drugs, and nimodipine have also been implicated as possible causes of Ogilvie's syndrome due to their actions in altering the parasympathetic/sympathetic balance.^{13,14} In our patient's case, obesity, chronic constipation, and narcotic drugs (fentanyl, thiopental sodium, vecuronium, isoflurane, nitrous oxide) seem to have been the most likely contributing causes, rather than interruption of S2 to S4 parasympathetic innervation secondary to surgical trauma.

Ogilvie's syndrome can occur at any age, and the male:female ratio is 1.5:1.¹¹ The clinical presentation is similar to that of distal mechanical obstruction: nausea, vomiting, painless abdominal distention, and constipation. Massive abdominal distention is the most dramatic and typical finding. Abdominal tenderness may be present, even in the absence of signs of impending ischemia or perforation. Bowel sounds can range from hyperactive to absent. The most important diagnostic test is plain abdominal radiography, which clearly demonstrates distal colonic obstruction with proximal colonic dilatation. Cecal diameter should be measured in order to predict perforation. Studies have shown that perforation generally does not occur when the cecal diameter is less than 12 cm, and that the incidence of perforation increases significantly when the diameter exceeds 14 cm.^{2,11}

Conservative treatment includes nasogastric decompression, parenteral correction of fluid or electrolyte imbalance, and a decrease or withdrawal of narcotic medication. Recently, Ponc et al¹⁵ reported that intravenous administration of neostigmine,

an acetylcholinesterase inhibitor, produces rapid colonic decompression in patients with Ogilvie's syndrome. If the cecal diameter continues to increase with these medical measures in place, the colon should be decompressed immediately. Colonoscopy is the treatment of choice for this if there is no evidence of bowel perforation on plain X-rays, while laparotomy is the only option in perforation cases. Laparotomy is also considered when ischemia of the bowel is observed during colonoscopy.¹⁶ Perforation of the cecum may occur in 14.8% of patients, with a reported mortality of up to 46%.⁵ Thus, prompt diagnosis and appropriate treatment is important for patients with postoperative abdominal distention. Although Ogilvie's syndrome is very rarely seen in lumbar disc surgery cases, it is important to examine the bowel sounds on day one post-surgery. If they are present, oral feeding can be started immediately. When the bowel is silent postoperatively, it is advisable to withdraw analgesics and observe closely for possible abdominal distention and other lumbar disc surgery complications, such as gastrointestinal perforation, urethral injury, or intra-abdominal vessel damage. Ogilvie's syndrome should always be considered in the differential diagnosis of such cases.

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