

# Impacted Obturator Hernia Treated Successfully with a Kugel Repair: Report of Two Cases

SHINJI MURAI<sup>1</sup>, TOMOTAKA AKATSU<sup>1</sup>, NOBUSHIGE YABE<sup>1</sup>, YOSHITAKA INOUE<sup>1</sup>, YUKAKO AKATSU<sup>2</sup>,  
and YUKO KITAGAWA<sup>2</sup>

<sup>1</sup>Department of Surgery, Ogikubo Hospital, 3-1-24 Imagawa, Suginami-ku, Tokyo 167-0035, Japan

<sup>2</sup>Department of Surgery, Keio University School of Medicine, Tokyo, Japan

## Abstract

Obturator hernia repair has traditionally been performed via an intra-abdominal approach, although laparoscopy is also emerging as a feasible alternative. On the other hand, the Kugel method is a minimally invasive and effective form of repair of groin hernia, but there have been few reports on its use for an incarcerated obturator hernia. We describe how we used the Kugel method to repair an obturator hernia in two patients. Both patients presented with acute intestinal obstruction, necessitating emergency surgery. Via a preperitoneal approach, the impacted obturator hernia was carefully released and the obturator canal defect was repaired with a Kugel patch. One patient recommenced oral intake on postoperative day (POD) 1, and was discharged on POD 5. The other patient's postoperative course was complicated by ileus, prolonging the hospital stay to 14 days. There has been no sign of recurrent disease for 6 and 21 months, respectively. The Kugel method offers several advantages, such as a short operative time (76–82 min), small scar (3 cm), and early postoperative ambulation (POD 1), thus minimizing the hospital stay. Further study is needed to confirm the usefulness of this procedure for an incarcerated obturator hernia.

**Key words** Obturator hernia · Kugel repair · Intestinal obstruction

## Introduction

Obturator hernias, which occur through the obturator canal, adjacent to the obturator vessels and nerve, are

relatively uncommon and often difficult to diagnose preoperatively.<sup>1–4</sup> They account for only 0.1%–1% of all hernias.<sup>5–8</sup> Various approaches have been advocated in the management of obturator hernia, but the intra-abdominal one has been the most favored.<sup>2,3,5,6</sup> Laparoscopic procedures have also been introduced as an alternative.<sup>9–11</sup> The Kugel method is minimally invasive and very effective for repair of a groin hernia,<sup>12–14</sup> but there is no information available regarding its applicability to incarcerated obturator hernia. We report our experience of using the Kugel method to successfully repair an obturator hernia in two patients.

## Case Reports

Both patients were emaciated elderly women aged 82 years and 84 years, respectively, and weighing 28 kg and 39 kg, respectively (Table 1). One patient tended to be chronically constipated, and neither was multiparous. Both patients presented with symptoms of intestinal obstruction, related to the Howship–Romberg sign and characterized by pain in the upper thigh; on the right side in one and the left side in the other. No masses were palpable in the abdomen or groin. The interval between the onset of symptoms and surgery ranged from 3 to 5 days. Neither patient had undergone previous abdominal surgery. Plain abdominal X-ray films and computed tomography (CT) scans showed dilated small-bowel loops (Fig. 1a). We diagnosed an impacted obturator hernia (on the right side in one patient and on the left side in the other) preoperatively from the CT scans, which showed a low-density mass between the pectineus and extraobturator muscles (Fig. 1b). Both patients underwent emergency surgery as soon as possible after the diagnosis was made; under general and epidural anesthesia. Using a preperitoneal approach, we made a 3-cm incision in the right lower abdomen and identified an impacted obturator hernia (Fig. 2a), which we

Reprint requests to: S. Murai

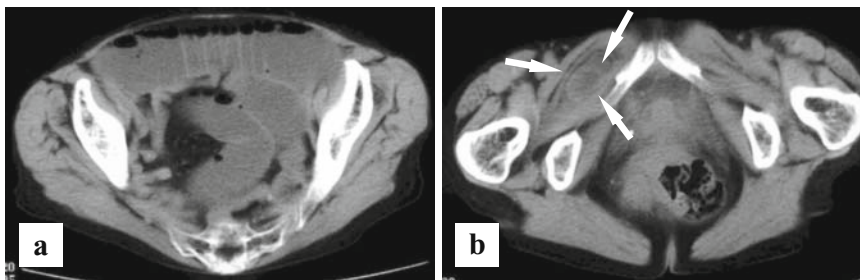
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S. Murai and T. Akatsu contributed equally to this study.

**Table 1.** Clinical and surgical findings of the two patients with an incarcerated obturator hernia treated by Kugel repair

	Patient	
	1	2
Age (years)	82	84
Sex	Female	Female
Height (cm)	156	140
Weight (kg)	39	28
Chronic constipation	Yes	No
Children borne (no. of times)	1	2
Duration of symptom (days)	3	5
Previous abdominal operation	No	No
Intestinal obstruction	Yes	Yes
Howship–Romberg sign	Yes	Yes
Concomitant disease	Hypertension, dementia	Angina, hypertension
Pre-op. diagnosis of OH	Yes (by CT)	Yes (by CT)
Affected side	Left	Right
Anesthesia	General + epidural	General + epidural
Hernia content	SB (viable)	SB (viable)
Bowel resection	No	No
Operative time (min)	82	76
Blood loss	No	No
Ambulation (POD)	1	1
Postoperative prolonged ileus	No	Yes
Ileus tube placement	No	Yes (POD 3–7)
Oral intake (POD)	1	7
Analgesic drugs (no. of times)	2	1
Wound infection	No	No
Hospital stay (days)	5	14
Recurrent disease	No: 6 months	No: 21 months

OH, obturator hernia; CT, computed tomography; SB, small bowel; POD, postoperative day



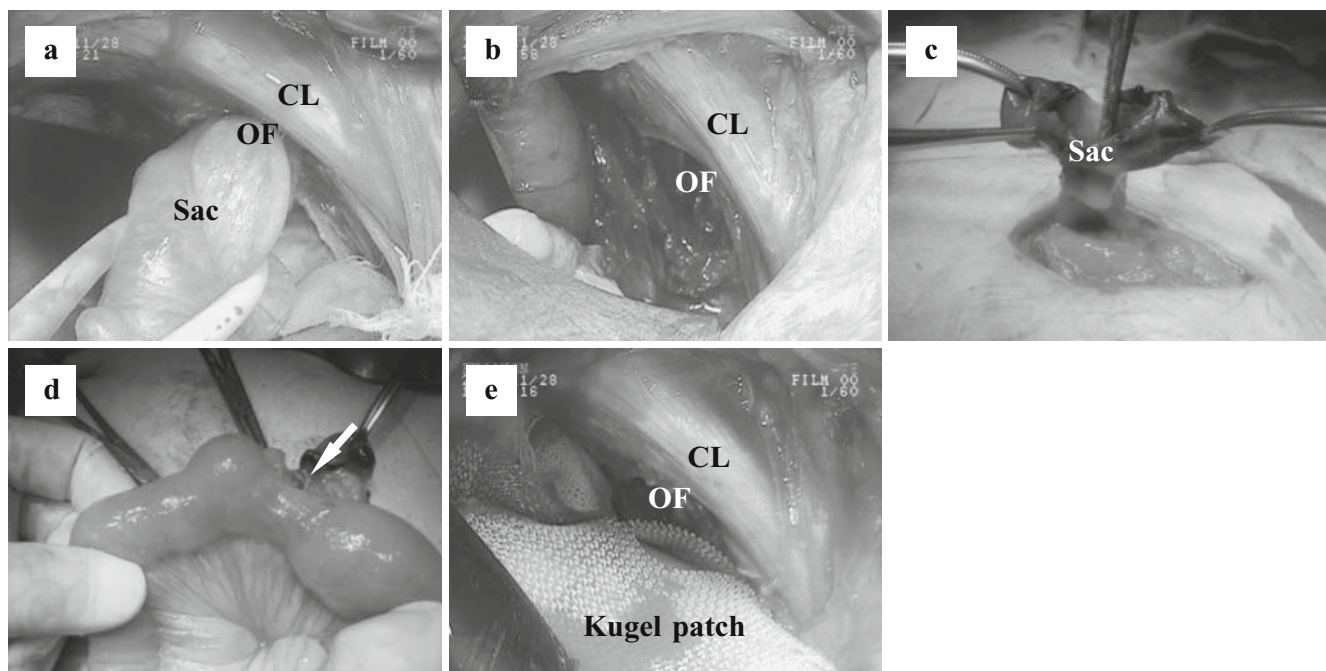
**Fig. 1a,b.** Computed tomography (CT) images showing small-bowel obstruction secondary to an incarcerated right obturator hernia. **a** Dilated small intestine loops in the pelvic cavity. **b** Bowel protruding outside the right obturator foramen (*arrows*)

released carefully and manually (Fig. 2b). Impacted ileum was found in the hernia sac, but because it was viable and not gangrenous (Fig. 2c,d), no bowel resection was required. The obturator canal defect was repaired with an 8 × 12-cm oval double layer of monofilament polypropylene mesh (Kugel patch; Bard, Murray Hill, NJ, USA) according to the method described previously (Fig. 2e).<sup>12,13</sup> There was no evidence of a concomitant direct, indirect, or femoral hernia. The operative time was 76–82 min, and there were no technical difficulties or blood loss. Both patients began ambulating on postoperative day (POD) 1. One patient who had undergone surgery 5 days after beginning to experience symptoms, suffered prolonged post-

operative ileus, so ileus tube placement was needed on POD 3–7. Analgesic drugs were required only once to twice. No sign of wound infection was noted postoperatively. The hospital stay was 5 days for one patient and 14 days for the other. Both patients have been free of recurrent disease for 6 and 21 months, respectively. The clinical courses of these patients are summarized in Table 1.

## Discussion

Obturator hernia has multiple predisposing factors.<sup>5–8</sup> Both of our patients were emaciated elderly women.



**Fig. 2a–e.** Intraoperative photographs. **a** A hernia sac was impacted into the obturator foramen (*OF*). **b** The sac was carefully and manually released from the *OF*. **c** The sac

was opened to inspect the hernia content. **d** The strangulated site (*arrow*) of the small intestine was viable. **e** Insertion of the Kugel patch. *CL*, Cooper's ligament

Advanced age and emaciation of the body are frequently associated with this condition because of the fragility of the tissues. In fact, obturator hernias occur approximately six times more often in women than in men because of the broader pelvis and larger lumen of their obturator foramen; making multiparous women even more predisposed.<sup>3,6</sup> Increased intra-abdominal pressure is another risk factor, and one of our patients was chronically constipated.<sup>3,5</sup> Although the hernias in our patients were one-sided, about 6% of cases are bilateral.<sup>5–7</sup>

Obturator hernia is relatively rare and consequently, a diagnostic challenge.<sup>1,2,8</sup> Unlike groin hernia, the hernia mass is not often palpable because it usually concealed beneath the pectineus muscle. The high morbidity and mortality are attributed to delayed recognition, with resultant peritonitis caused by ruptured gangrenous bowel; thus, a rapid diagnosis is essential. Computed tomography scans are now used to detect this disease and have proved to be extremely useful in both our patients.<sup>1,2,4</sup>

The Howship–Romberg sign, evident in both our patients, is characterized by pain along the distribution of the obturator nerve caused by compression of the nerve by the hernia sac. However, this sign is present in only 15%–50% of cases.<sup>3,8</sup> Moreover, if impaction of the intestine develops, the severity of the intra-abdominal symptoms generally masks this sign, so we should be cautious about it.

Once impaction is diagnosed, prompt surgical intervention is essential to prevent perforative peritonitis. A transabdominal approach is generally preferred because it allows for easy evaluation and release of the impacted bowel with segmental resection if indicated.<sup>3,6,7</sup> Laparoscopy is emerging as an alternative.<sup>9–11</sup> However, this approach is not always recommended for patients with bowel obstruction because of the high risk of intestinal damage.

In 1999, Kugel devised a new technique for non-laparoscopic preperitoneal groin hernia repair.<sup>12,13</sup> Our department adopted this technique in 2003 and has since used it to repair inguinal hernia in more than 400 patients. However, there is no information available regarding whether this procedure is applicable to an incarcerated obturator hernia. We used this technique successfully and without any technical difficulties to repair an obturator hernia in our two patients within a short operative time of 76–82 min. Postoperatively, early ambulation was practicable, and analgesic drugs were needed only once or twice. Moreover, early discharge is likely, as long as postoperative ileus subsides promptly. Neither of our patients has shown any sign of hernia recurrence in 6 and 17 months of follow-up, respectively.

In summary, the Kugel method offers several advantages over the conventional forms of repair for obturator hernias, including a short operative time, small scar, reduced postoperative pain, and early postoperative

ambulation, thereby minimizing the hospital stay and allowing fast return to regular activities. Further study is needed to substantiate the usefulness of this procedure for an incarcerated obturator hernia.

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