—Case Reports—

Right Inguinal Hernia Encompassing the Uterus, Right Ovary and Fallopian Tube in an Elderly Female: Case Report

Junji Ueda[1], Hiroshi Yoshida[1], Hiroshi Makino[1], Hiroshi Maruyama[1], Tadashi Yokoyama[1], Atsushi Hirakata[1], Ichiro Akagi[1], Manabu Watanabe[3], Eiichi Uchida[3] and Eiji Uchida[2]

[1]Department of Surgery, Nippon Medical School Tama Nagayama Hospital, Tokyo, Japan
[2]Department of Gastrointestinal and Hepato-Biliary-Pancreatic Surgery, Nippon Medical School, Tokyo, Japan
[3]Uchida Hospital, Tokyo, Japan

The uterus, ovary, and fallopian tube are rarely present in an inguinal hernia. We report on an operation to treat just such a rare condition for a right inguinal hernia. An 87-year-old Japanese woman was admitted with swelling in the right inguinal region and a purulent discharge from the vagina. Vital signs were stable, but the mobile mass was irreducible. Computed tomography of the abdomen indicated uterine tissue in a right inguinal hernia. We diagnosed an inguinal hernia with an incarcerated uterus and performed surgery on that basis. An incision approximately 6 cm long was made in the skin above the swollen area to open the inguinal sac, disclosing a tumor enveloped by a hernial sac. Opening the hernial sac revealed the prolapsed uterus, the fallopian tube, and the right ovary. Because no ischemic change was noted, the incarcerated uterus was returned to the abdominal cavity, and the hernial opening was closed with the onlay mesh technique. The posterior wall of the inguinal canal was found to have prolapsed laterally to the inferior epigastric artery, resulting in an external inguinal hernia. This case demonstrates that careful attention must be paid to inguinal hernias in female patients because the uterus, ovary, and fallopian tube may be involved. (J Nippon Med Sch 2016; 83: 93–96)

Key words: inguinal hernia, uterus, operation

Introduction

Inguinal herniorrhaphy is one of the most commonly performed elective procedures worldwide. In the United States, an estimated 800,000 repairs of inguinal hernias are performed each year, accounting for 10% to 15% of all surgical procedures[1]. Hernia uterine inguinale is a rare condition often presenting within the first few years of life as an asymptomatic palpable mass in the inguinal/groin area. This type of hernia contains uterine tissue and may encompass the fallopian tube, ovaries and, in rare cases, the bladder[2]. Sliding hernias of the fallopian tube, ovaries, and uterus occur occasionally in newborn female infants but are rare in older women[3].

We report a case of successful surgical management of an elderly woman who had a right inguinal hernia encompassing the uterus, right ovary, and fallopian tube.

Case Presentation

An 87-year-old Japanese woman was admitted with swelling in the right inguinal region and a purulent discharge from the vagina. The swelling had been present for 2 months. The patient also had hypertension, diabetes mellitus, and cholelithiasis. Laboratory examinations returned the following values: white blood cell count, 5,950/μL (normal: 4,000 to 8,000 /μL); serum hemoglobin concentration, 12.8 g/dL (normal: 14 to 17 g/dL); platelet count, 26.3×10^4/μL (normal: 12 to 38×10^4/μL); serum aspartate aminotransferase, 14 IU/L (normal: <28 IU/L); serum alanine aminotransferase, 5 IU/L (normal: <33 IU/L); serum albumin level, 3.4 g/dL (normal: 3.8 to 5.5 g/dL); serum creatinine level, 0.6 mg/dL (normal: <1.2 mg/dL); and C-reactive protein, 0.1 mg/dL (normal: <0.3

Correspondence to Junji Ueda, Department of Surgery, Nippon Medical School Tama Nagayama Hospital, 1–7–1 Nagayama, Tama, Tokyo 206–8512, Japan
E-mail: junji0821@nms.ac.jp
Journal Website (http://www.nms.ac.jp/jnms/)

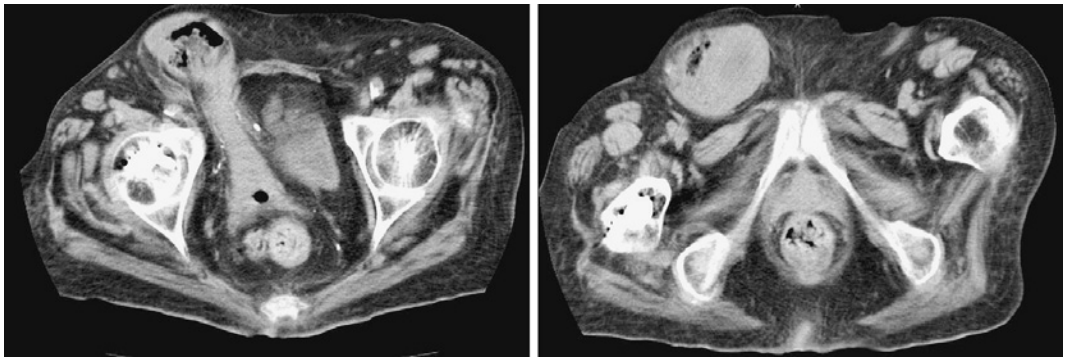

Fig. 1 Computed tomography of the abdomen revealed uterine tissue in the right inguinal hernia.

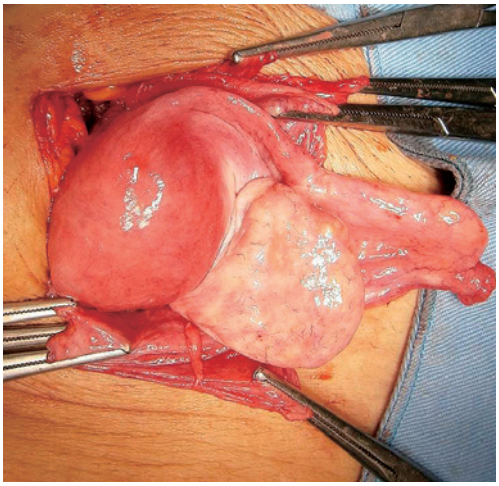

Fig. 2 The prolapsed uterus was revealed when the hernial sac was opened.

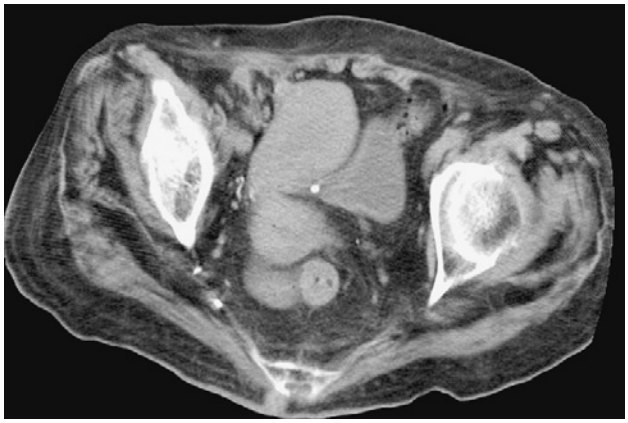

Fig. 3 Computed tomography of the abdomen indicated no recurrence of the hernia.

mg/dL). Computed tomography of the abdomen indicated that uterine tissue was present in the right inguinal hernia (**Fig. 1**).

We diagnosed an inguinal hernia with an incarcerated uterus and performed surgery on that basis. An incision approximately 6 cm long was made in the skin above the swollen area to open the inguinal sac; a tumor enveloped by a hernial sac was disclosed. Opening the hernial sac revealed the prolapsed uterus, the fallopian tube, and the right ovary (**Fig. 2**). Because no ischemic change was noted, the incarcerated uterus was returned to the abdominal cavity, and the hernial opening was closed with the onlay mesh technique. The posterior wall of the inguinal canal was found to have prolapsed laterally to the inferior epigastric artery, resulting in an external inguinal hernia. The postoperative course was uneventful and the patient was discharged on postoperative day 7. After 9 months, computed tomography of the abdomen showed no recurrence of the hernia, and no the patient was not taking any medication (**Fig. 3**).

Discussion

Inguinal hernias encompassing the uterus, ovary, and fallopian tube are usually seen only in newborns[4]. When herniated ovarian and fallopian tubes are detected, they are commonly associated with developmental defects of the genital tract[5]. The fallopian tube and ovary are found as a sliding component in 15% to 20% of inguinal hernias in childhood[6,7]. Hernia uterus inguinale, or inguinal hernia containing the uterus, is an extremely rare condition in which the uterus and uterine adnexa are found inside the inguinal canal in female infants. The incidence of this condition is highest in infancy and decreases with age[8].

Hernia uterus inguinale is a rare congenital anomaly found typically in hermaphrodites[9]. Persistent müllerian duct syndrome is another condition that leads to hernia uteri inguinale[10]; it is a relatively rare variety of male pseudohermaphroditism. Patients are phenotypically male and have a male (46XY) karyotype. However, they will have müllerian remnants, such as fallopian tubes, uterus, and the proximal vagina, which are in close proximity to the testes and vas deferens. A rudimentary va-

Table List of cases of hernia uterus inguinale in adult women

No.	age (y)	Hernia contents	Hernia site	Vagina	Gravidity/Menstruation
1[12]	34	Rudimentary uterus/ovary/oviduct	Bilateral	Agenesis	Primary amenorrhea
2[13]	20	Rudimentary uterus/ovary/oviduct	Bilateral	Agenesis	Primary amenorrhea
3[14]	35	Rudimentary uterus/ovary/oviduct	Left	Normal	Fifth pregnancy
4[15]	16	Rudimentary uterus/ovary/oviduct	Left	Agenesis	Primary amenorrhea
5[16]	19	Rudimentary uterus/ovary/oviduct	Left	Normal	Normal menstruation
6[17]	26	Rudimentary uterus/ovary/oviduct	Right	Normal	Third pregnancy
7[9]	20	Rudimentary uterus/ovary/oviduct	Left	Agenesis	Primary amenorrhea
8[18]	25	Rudimentary Uterus	Right	Normal	Normal menstruation
9[3]	23	Rudimentary uterus/oviduct	Left	Normal	Normal menstruation
10[4]	47	Uterus/ovary/oviduct	Left	Normal	Multiparous
Our case	87	Uterus/ovary/oviduct	Right	Normal	Multiparous

gina ends with an opening into the prostatic utricle. It is usually found by chance during routine orchidopexy or inguinal hernia repair[10].

In adult women with hernia uterus inguinale, different genital abnormalities have been identified[11]. Cases of hernia uterus inguinale in adult women are extremely rare. In our investigation of the literature with the search engine PubMed, we found only 10 cases. These cases are summarized in the **Table**[3,4,9,12–18]. Surprisingly, the uterus contained in the hernia was a rudimentary uterus in 9 of the 10 cases. A normal uterus was contained in only 2 cases, including the case we report here. The hernial sites varied across the cases, and there was no deviation. Vaginal agenesis was found in 3 cases. With regards to patient age, our patient was the oldest of all the cases. We considered our case to be extremely rare, because the patient was both elderly and had a normal uterus.

Abnormalities in embryogenesis of the müllerian duct system resulting in congenital anomalies of the female genital tract are relatively common[19]. The failed müllerian duct leads to the formation of an isolated hemiuterus without a contralateral structure (complete failure) or with varying stages of a rudimentary horn (partial failure)[19,20]. The rudimentary uterus may often be contained in an inguinal hernial sac.

The mechanisms of uterus prolapse are unclear. In our case, the patient was extremely elderly and the muscles of the abdominal wall may have been weak. Moreover, she was multiparous. These factors may have also played a causative role in the development of the hernia. We found during the surgery that the uterus had mobility and was surrounded with extremely loose connective tissue. Although she was not aware of the right inguinal hernia, we presume that the patient had had the inguinal hernia for a long time. The right ovary was sliding because the uterus was prolapsed. The patient was aware of the swelling in the right inguinal region.

Conclusion

We encountered a rare case of hernia uterus inguinale. This case demonstrates that careful attention must be paid to inguinal hernias in elderly and multiparous women, because the uterus, ovary, and fallopian tube may be involved.

Conflict of Interest: None.

References

1. Rutkow IM: Demographic and socioeconomic aspects of hernia repair in the United States in 2003. Surg Clin North Am 2003; 83: 1045–1051.
2. Mandel DC, Beste T, Hope W: Hernia uterine inguinale: an uncommon cause of pelvic pain in the adult female patient. J Minim Invasive Gynecol 2010; 17: 787–790.
3. Kokcu A, Malazgirt Z, Cetinkaya MB, Tosun M: Presence of a uterine horn and fallopian tube within an indirect hernial sac: report of a rare case. Hernia 2010; 14: 325–327.
4. Turk E, Karagulle E, Oguz H, Toprak E: Indirect hernial sac containing the uterus, ovary, and fallopian tube in association with a giant intraabdominal lipoma: report of a case. Hernia 2012; 16: 593–595.
5. Bradshaw KD, Carr BR: Ovarian and tubal inguinal hernia. Obstet Gynecol 1986; 68: 50–52.
6. Fowler CL: Sliding indirect hernia containing both ovaries. J Pediatr Surg 2005; 40: 13–14.
7. Goldstein IR, Potts WJ: Inguinal hernia in female infants and children. Ann Surg 1958; 148: 819–822.
8. Akıllıoğlu I, Kaymakcı A, Akkoyun I, Güven S, Yücesan Ş, Hiçsönmez A: Inguinal hernias containing the uterus: A case series of 7 female children. J Pediatr Surg 2013; 48: 2157–2159.
9. Kriplani A, Banerjee N, Aminni AC, Kucheria K, Takkar D: Hernia uterus inguinale in a 46, XX female. A case report. J Reprod Med 2000; 45: 48–50.

10. Manjunath BG, Shenoy VG, Raj P: Persistent müllerian duct syndrome: How to deal with the müllerian duct remnants—a review. Indian J Surg 2010; 72: 16–19.
11. Kokcu A, Malazgirt Z, Cetinkaya MB, Tosun M: Presence of a uterine horn and fallopian tube within an indirect hernial sac: report of a rare case. Hernia 2010; 14: 325–327.
12. Deutschman D: Complete congenital absence of the vagina associated with bilateral hernias of the uterus, tubes, and ovaries. NY Med J 1923; 118: 570–571.
13. Thomson GR: Complete congenital absence of the vagina associated with bilateral hernia of uterus, tubes and ovaries. Br J Surg 1948; 36: 99–100.
14. Mahmood A: Unusual surgical emergency in pregnancy. Br Med J 1970; 3: 772.
15. Riggall FC, Cantor B: 46,XX hernia uterus inguinale and vaginal agenesis. Obstet Gynecol 1980; 56: 265–266.
16. Elliott DC, Beam TE, Denapoli TS: Hernia uterus inguinale associated with unicornuate uterus. Arch Surg 1989; 124: 872–873.
17. Keating JP, Yu MH, Grunewald B: Hernia uterus inguinale associated with unilateral renal agenesis. Aust N Z J Surg 1995; 65: 688–690.
18. Kamio M, Nagata T, Yamasaki H, Yoshinaga M, Douchi T: Inguinal hernia containing functioning, rudimentary uterine horn and endometriosis. Obstet Gynecol 2009; 113: 563–566.
19. Gonçalves E, Prata JP, Ferreira S, Abreu R, Mesquita J, Carvalho A, Pinheiro P: An unexpected near term pregnancy in a rudimentary uterine horn. Case Rep Obstet Gynecol 2013; Article ID 307828, 4 pages.
20. Chopra S, Keepanasseril A, Rohilla M, Bagga R, Kalra J, Jain V: Obstetric morbidity and the diagnostic dilemma in pregnancy in rudimentary horn: retrospective analysis. Arch Gynecol Obstet 2009; 280: 907–910.

(Received, June 15, 2015)
(Accepted, December 10, 2015)