

## Primary ovarian leiomyoma

Mariam Mathew, MD, MRCOG, Andrej Krolkowski, MD, PhD, Ibrahim Al-Haddabi, MD, Vadakkepat Nirmala, MD.

---

### ABSTRACT

Ovarian leiomyoma is a rare and incidentally detected neoplasm, clinically indistinguishable from subserous leiomyomas and ovarian fibromas, until histopathological confirmation. We present a case of leiomyoma arising primarily from the ovary in a 35 year old woman.

Saudi Med J 2005; Vol. 26 (2): 306-307

---

Leiomyoma arising primarily from the ovary is very rare.<sup>1</sup> They are usually small, incidentally detected neoplasms and frequently associated with uterine leiomyomas.<sup>2</sup> They are frequently diagnosed as subserous leiomyomas or fibromas until a histopathological confirmation. We report a case of ovarian leiomyoma in a 35-year-old Omani woman, as it is a rare condition; with less than 100 cases reported in the worldwide literature.

**Case Report.** A 35-year-old unmarried woman was referred to our hospital from a private clinic, with a lower abdominal mass noticed since 6 months. There were no menstrual, urinary or bowel complaints. Abdominal examination revealed a firm, mobile mass with smooth surface up to the level of umbilicus. The patient refused a vaginal examination. On abdominal ultrasonography, a 10 x 8 cm mixed echoic mass was seen in close proximity to the fundus of uterus. The right ovary could not be separately seen. Left ovary and both kidneys were normal. Subserous uterine leiomyoma was suspected. Routine laboratory investigations and CA 125 were normal, and patient was scheduled for laparotomy. At surgery, a tumor measuring 12x12 cm was found at the site of right ovary. The

right ovary could not be separately identified. The mass was solid, with lobulated but smooth surface. Left ovary and both tubes were normal. There was a pedunculated fundal fibroid of 4x3 cm and multiple seeding fibroids were present in the body of uterus. Ovarian fibroma was suspected; right oophorectomy and myomectomy were performed. It was not possible to preserve even a part of the affected ovary as no healthy ovarian tissue was identified. The postoperative period was uneventful.

**Pathological examination.** Macroscopic examination showed a large nodular mass with smooth outer surface measuring 11x9x9 cms. The cut surface appeared whorled as in a typical leiomyoma and showed a circumscribed area of necrosis. Compressed ovarian tissue was identified at the periphery of the mass (**Figure 1**). Microscopic examination showed fascicles of spindle shaped cells resembling smooth muscle cells interspersed with collagen and blood vessels. The appearance was indistinguishable from that of an uterine leiomyoma. An area of confluent hyaline necrosis was present, well-demarcated by surrounding fibrosis. Ovarian tissue was seen at the periphery with only hilar connective tissue separating it from the neoplasm. (**Figure 2**).

---

From the Department of Obstetrics and Gynecology (Mathew, Krolkowski) and the Department of Pathology (Al-Haddabi, Nirmala), Sultan Qaboos University Hospital, Al-Khoudh, Muscat, *Sultanate of Oman*.

Received 5th July 2004. Accepted for publication in final form 21st August 2004.

Address correspondence and reprint request to: Dr. Mariam Mathew, Department of Obstetrics and Gynecology, Sultan Qaboos University Hospital, Al Khoudh, PO Box 38, PC 123, Muscat, *Sultanate of Oman*. Tel/Fax: +968 513951. E-mail: mathewz@omantel.net.om



Figure 1 - Well-circumscribed ovarian mass with whorled cut surface. Normal ovarian tissue present at the periphery of smaller piece.

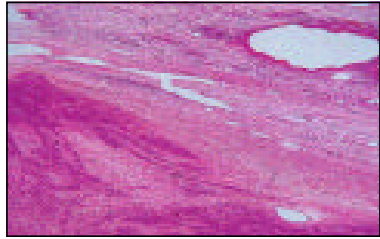


Figure 2 - Photomicrograph shows neoplasm composed of smooth muscle bundles with ovarian hilar stroma. Hematoxylin and eosin x 200.

**Discussion.** Primary ovarian leiomyomas have been reported in women aged between 20 and 65 years, often in an age group similar to uterine leiomyomas, which they are frequently associated.<sup>2</sup> Most cases are asymptomatic and are found on routine examination, at surgery, or at autopsy as the tumors are usually too small to produce symptoms.<sup>2,3</sup> Large tumors with pressure symptoms and pelvic pain have also been documented in the literature.<sup>3,4</sup> The largest tumor, measuring 36x37x11cms and weighing 6855gms, was reported in a 72-year-old nulliparous woman who presented with ascites and polymyositis.<sup>5</sup>

Leiomyomas of the ovary are macroscopically and microscopically indistinguishable from uterine leiomyomas. Degenerative changes such as hyalinization, calcification, and cyst formation may be seen in ovarian leiomyomas as well.<sup>5</sup> Primary leiomyosarcoma of the ovary differs from its benign counterpart in being hypercellular and in showing increased mitotic activity (>10 mitotic figures per 10 high power fields).<sup>6</sup>

Primary ovarian leiomyomas must be distinguished from leiomyomatosis peritonealis disseminata secondarily involving the surface of the ovary and tumors arising in the broad ligament or parasitic uterine leiomyomas.<sup>2,3,5</sup> Because uterine leiomyomas are common, they often coexist with primary ovarian leiomyomas, as in our case. Histogenesis of ovarian leiomyomas is still controversial.<sup>7</sup> The consensus of most recent reports is that these neoplasms originate from the walls of blood vessels in the ovarian hilus or from the smooth muscle fibres near the attachment of ovarian ligament.<sup>3,5</sup> Ultrasound and computerized tomography features reported are of non-specific solid masses without demonstration of the origin.<sup>8,9</sup>

Magnetic resonance imaging can distinguish between uterine and ovarian leiomyoma by demonstrating the supplying vessels arising directly from the myometrium.<sup>10</sup> Differentiation from ovarian fibroma and thecoma requires histopathological examination.<sup>1,3</sup> In the present case, only ultrasonography was performed. Although ovarian leiomyoma is rare, it should be included in the differential diagnosis of subserosal uterine leiomyoma and ovarian fibroma.

## References

1. Kobayashi Y, Murakami R, Sugizaki K, Yamamoto K, Sasaki S, Tajima N, et al. Primary leiomyoma of the ovary: a case report. *Eur Radiol* 1998; 8: 1444-1446.
2. Matamala MF, Nogales FF, Aneiros J, Herraiz MA, Caracul MD. Leiomyomas of the ovary. *Int J Gynecol Pathol* 1988; 7: 190-196.
3. Zorlu CG, Cengiz S, Harmanli HO. Primary ovarian leiomyoma. A case report. *Gynecol Obstet Invest* 1993; 36: 191-192.
4. Khaffaf N, Khaffaf H, Wuketich S. Giant ovarian leiomyoma as a rare cause of acute abdomen and hydronephrosis. *Obstet Gynecol* 1996; 87: 872-873.
5. Van Winter JT, Stanhope CR. Giant ovarian leiomyoma associated with ascites and polymyositis. *Obstet Gynecol* 1992; 80: 560-563.
6. Dixit S, Singhal S, Baboo HA, Vyas RK, Neema JP, Murthy R et al. Leiomyosarcoma of the ovary. *J Postgrad Med* 1993; 39: 151-153.
7. Kojiro S, Tomioka Y, Takemoto Y, Nishida N, Kamura T, Kojiro M. Primary leiomyoma of the ovary - a report of 2 resected cases. *Kurume Med J* 2003; 50: 169-172.
8. Nicoll JJ, Cox PJ. Leiomyoma of the ovary with ascites and hydrothorax. *Am J Obstet Gynecol* 1989; 161: 177-178.
9. Kohno A, Yoshikawa W, Yunoki M, Yanagida T, Fukunaga S. MR findings in degenerated ovarian leiomyoma. *Br J Radiol* 1999; 72: 1213-1215.
10. Togashi K. MR imaging of the female pelvis. Tokyo: Igaku-sho-in; 1993.