

## Periuterine Leiomyoma: A review of seven cases

<sup>a</sup>Gabriel Ebagu Njeze, <sup>b</sup>Wilson Onuigbo

<sup>a</sup>Chief Medical Director and Consultant Surgeon, Enugu State University of Technology Teaching Hospital, Park Lane, Enugu

<sup>b</sup>Professor of Pathology, Medical Foundation & Clinic, 8 Nsukka Lane, Enugu

### Corresponding author:

**Gabriel Ebagu Njeze**

Chief Medical Director and Consultant Surgeon, Enugu State University of Technology Teaching Hospital, Park Lane, Enugu 400001, Nigeria

---

### Abstract

Seven cases of periuterine leiomyoma seen over a 40 year period are reported. The patients were all females and Igbos and the average age at presentation was 38.5 years, (range 28 – 45 years). One patient had anterior abdominal wall mass and another, a rectal prolapse. Two patients with ovarian leiomyoma had weight loss, while three other patients presented with pelvic masses. There was no history of previous myomectomy in any of these patients. Duration of symptoms ranged from 8 months to 9 years. All the patients had surgical excision of these masses. Periuterine leiomyoma is rare in South East Nigeria and can cause diagnostic confusion.

**KEYWORDS:** Periuterine, leiomyoma, rare, unusual locations, smooth muscle.

---

**Introduction:** Uterine leiomyomas are the most common uterine neoplasms; approximately 20%–30% of women older than 35 years have uterine leiomyomas that manifest clinically, and diagnosis is straightforward.<sup>1,2</sup> However, leiomyomas occasionally occur in unusual locations such as the vagina, urinary bladder, urethra, vulva, and ovaries, or anywhere that smooth muscles can be found.<sup>1</sup> These extrauterine leiomyomas are rare; some may develop unusual growth patterns and may even mimic malignancies, thus causing diagnostic difficulty. Deeply situated tumors are likely to be confused with a well differentiated malignant tumor, while the superficial lesions are readily recognized as benign.<sup>1</sup>

Awareness of the unusual and protean manifestations of these benign masses is important to distinguish them from malignant tumors that may closely resemble them. We present seven cases of periuterine leiomyomas seen over a 40-year period (1970-2010).

**Material and Methods:** Information about tumors excised from surgical and gynaecological patients and sent to a central pathology laboratory located in Enugu for reporting, were the primary sources of information. This central laboratory gets specimens from the different parts of South Eastern Nigeria. Patient's laboratory forms were reviewed and data about age, sex, tribe, site of tumor, duration of symptoms and histologic diagnosis were extracted.

**Results:** Between 1970 and 2010, a total of seven patients were diagnosed with leiomyoma outside the uterus. The patients were all females and Igbos and the average

age at presentation was 38.5 years (range 28 - 45 years). One patient had anterior abdominal wall swelling, another had a rectal prolapse. Two patients with ovarian leiomyoma complained of abdominal swelling and heaviness, abdominal discomfort and weight loss, while one of these had irregular vaginal bleeding and anemia. Three patients with broad ligament lesions presented as pelvic masses (Table 1). There was no history of previous myomectomy in any of these patients. Duration of symptoms ranged from 8 months to 9 years. These patients had surgical excision of these masses.

**Discussion:** Leiomyomas represent the most common gynecologic and uterine neoplasms.<sup>1</sup> Extrauterine leiomyomas are rarer, and they present a greater diagnostic challenge: These histologically benign tumors may arise in nearly any anatomic site.<sup>2,3</sup>

There was a patient who had a leiomyoma of the anterior abdominal wall, which presented as anterior abdominal swelling near the umbilicus. She had a history of previous caesarean section but not myomectomy. This rare type of extrauterine leiomyoma can attain a large size, and be a cause of pain and discomfort. Its position supports the theory that leiomyoma can be found anywhere there are smooth muscles.<sup>3</sup> There have been reports of anterior abdominal wall leiomyomas elsewhere in India and Oman without any history of uterine fibroid.<sup>3,4</sup> Extrauterine leiomyomas in the pre-peritoneal area or within the anterior abdominal wall muscles are extremely uncommon, and are thought to be due to seeding following surgical resection of uterine fibroids<sup>5</sup>. However, it has been reported to occur in an umbilical scar, in a post-menopausal woman, who had no history of gynaecological surgery or hormone therapy.<sup>6</sup>

The gastrointestinal tract is the other site to expect a leiomyoma outside the genitalia.<sup>2</sup> In this report, there was a leiomyoma in the rectum of a patient who had rectal prolapse. Progesterone and insulin like growth factors have been implicated in transformation of a smooth muscle cell to leiomyoma.<sup>4</sup> These smooth muscle tumors theoretically may occur throughout the entire gastrointestinal tract where they may be confused with Gastro Intestinal Stromal Tumor (GIST). However, leiomyomas are more commonly seen in the oesophagus and small intestine, and are so rarely seen in the colon and rectum<sup>7</sup> that a case of colonic leiomyoma in a child in Texas was reported.<sup>8</sup> Symptomatic colonic and rectal leiomyomas are encountered less frequently, with only sporadic reports in literature.<sup>7,9</sup> When they are symptomatic, they occur as sessile or polypoid lesions that cause pain or lower gastrointestinal haemorrhage.<sup>8,10</sup> They are found accidentally during laparotomy for other conditions and account for 1 in 2000 or more rectal tumors.<sup>10</sup>

Three patients had broad ligament leiomyomas which presented as pelvic masses and discomfort. Even though extrauterine leiomyoma is an uncommon finding, and little is known about its pathophysiology, the ubiquitous disposition of smooth muscles, including those of contiguous blood vessels, explains why they can be found at various sites.<sup>2,11</sup> The discomfort caused by broad ligament leiomyoma is often due to pressure effects on adjacent organs<sup>12</sup> especially the urinary bladder, in which circumstance the patient may present as a urological problem.

A leiomyoma occurring in this location poses great diagnostic difficulty in the absence of trans-vaginal ultrasonography, computed tomography or magnetic resonance imaging. Trans-vaginal ultrasonography, though inexpensive, clearly separates broad ligament leiomyoma from ovaries and uterus. Broad ligament leiomyoma is an example of a parasitic leiomyoma<sup>12</sup> which is thought to occur when leiomyoma becomes adherent to one of the surrounding structures, e.g., broad ligament or omentum. It thereafter develops an auxiliary blood supply and finally loses the original attachment to the uterus, thus becoming a parasite. It has also been suggested that broad ligament leiomyomas may also originate from hormonally sensitive smooth muscle elements of that ligament.<sup>13</sup>

Two cases of ovarian leiomyomas were recorded in this 40-year period; they presented as distinct intra-pelvic masses and pain. Elsewhere in Nigeria,<sup>14</sup> Michigan,<sup>15</sup> and Tokyo,<sup>16</sup> these also have been reported. Ovarian leiomyoma is a very rare tumor, accounting for 0.5 to 1% of all benign ovarian tumors. Its origin is unresolved, and can cause intermittent abdominal pain.<sup>16</sup> It is so rare that even with modern advances in imaging techniques, its imaging features have seldom been described for preoperative characterization and diagnosis.<sup>17</sup> This tumor probably arises from smooth muscle cells in the ovarian hilar blood vessels but there are other possible origins including cells in the ovarian ligament, smooth muscle cells or multipotential cells in the ovarian stroma, undifferentiated germ cells, or cortical smooth muscle metaplasia.<sup>18</sup> Additionally, smooth muscle metaplasia of endometriotic stroma, smooth muscle present in mature cystic teratomas, and in the walls of mucinous cystic tumor may explain their occurrence in the ovary in some cases.<sup>19</sup>

In conclusion, extrauterine leiomyoma is also an uncommon entity in South Eastern Nigeria. In the abdomen it should be considered in the differential diagnosis of obscure intra-abdominal masses. They are amenable to surgical excision. We add our 7 cases found over a 40-year period to the few others reported elsewhere.

**Table 1. Distribution of the leiomyomas in the abdomen**

Site	No. of Patients
Anterior abdominal wall	1
Rectum	1
Broad ligament	3
Ovary	2
Total	7

### References

1. Fasih N, Alampady K, Shanbhogue, P, Fraser-Hill M A, Papadato D, Kielar A Z. et al. (2008) Leiomyomas beyond the uterus: Unusual locations, rare manifestations. *Radiographics* 28. pp.931-1948.
2. Szklaruk J, Tamm EP, Choi H, Varavithya V. (2003) MR imaging of common and uncommon large pelvic masses. *Radiographics* 23(2). pp.403-424.
3. Narayanaswamy M, Bhaskaran A, Kalyani R, Yamini A. (2011) Abdominal Wall Leiomyoma Without Antecedent Pelvic Surgery Mimicking an Ovarian Tumour. *Journal of Clinical Biomedical Sciences* 1(2). pp.74-76.

4. Al-Wadaani HA. (2012) Anterior Abdominal Wall Leiomyoma Arising De Novo in a Perimenopausal Woman. *Oman Medical Journal* 27(4).pp.323–325.
5. Ostrzenski A: (1997) Uterine leiomyoma particle growing in an abdominal wall incision after laparoscopic retrieval. *Obstetrics and Gynecology* 89.pp.853-854.
6. Lalor PF, Uribe A, Daun GS. (2005) De novo growth of a large peritoneal leiomyoma of the anterior abdominal wall. *Gynecology Oncology* 97,(2). pp.19-721.
7. Husain N, Botchu R, Shahabdeen MM Schofield J, South L.(2004) Leiomyoma of the rectosigmoid junction in an adult. *The Internet Journal of Surgery* ISSN:1528-8242;7(1).
8. Cummings SP, Lally KP, Victor Pinnero-Carrero et al. (1990) Colonic leiomyoma—An unusual cause of gastrointestinal hemorrhage in childhood. *Disease of Colon and Rectum*.33(6). pp.511-514.
9. Kusminsky RE, Bailey W. (1977) Leiomyomas of the rectum and anal canal: report of six cases and review of the literature. *Disease of Colon and Rectum* 20(7). pp.580-599.
10. Chow WH, Kwan WK, Ng WF. (1977) Endoscopic removal of leiomyoma of the colon. *Hong Kong Medical Journal* 3(3).pp.325-327.
11. Roue A, Laboisie C, Winer N, Darnis E, Bouquin R, Lopes P, Phillippe HJ. (2007) Extra-uterine pelvic leiomyoma: diagnosis and practical management. *Journal of Gynecology & Obstetrics & Reproductive Biology* 36(4). pp.403-408.
12. Meniru GI, Wasdahl D, Onuora CO, et al. (2001) Vaginal leiomyoma co-existing with broad ligament and multiple uterine leiomyomas. *Archives of Gynecology and Obstetrics* 265.pp.105-107.
13. Rajanna DK, Pandey V, Janardhan S, Datti SN. (2013) Broad ligament fibroid mimicking as ovarian tumor on ultrasonography and computed tomography scan. *Journal of Clinical Imaging Sciences*. February 28. doi: 10.4103/2156-7514.107912.
14. Emovon EU, Cahill DJ, Joels LA, Stegmann MH.(1999) Bilateral primary ovarian leiomyoma: a rare cause of ovarian tumour in a young woman. *Journal of Obstetrics and Gynecology* 19. p.676.
15. Doss BJ, Wanek SM, Jacques SM, Qureshi F, Ramirez NC, Lawrence WD. (1999) Ovarian leiomyomas: clinicopathologic features in fifteen cases. *International Journal of Gynecological Pathology* 18. pp.63-68.
16. Kobayashi Y, Murakami R, Sugizaki K et al. (1998) Primary leiomyoma of the ovary: a case report. *European Radiology* 8.pp.1444-1446.
17. Van Winter JT, Stanhope CR. (1992) Giant ovarian leiomyoma associated with ascites and polymyositis. *Obstetrics and Gynecology* 80.pp.560–563.
18. Kim JC, Nam SL, Suh KS.(2000) Leiomyoma of the ovary mimicking mucinous cystadenoma. *Clinical Imaging* 24. pp.34-37.
19. Fukunaga M.(2000) Smooth muscle metaplasia in ovarian endometriosis. *Histopathology* 36. pp.348-352.