CASE REPORT

Parasitic myomas after laparoscopic surgery: an emerging complication in the use of morcellator? Description of four cases

Gaspare Cucinella, M.D., Ph.D.,[a] *Roberta Granese, M.D., Ph.D.,*[b] *Gloria Calagna, M.D.,*[a] *Edgardo Somigliana, M.D., Ph.D.,*[c] *and Antonio Perino, M.D., Ph.D.*[a]

[a] Department of Obstetrics and Gynaecology, University Hospital "Paolo Giaccone," Palermo; [b] Department of Obstetrics and Gynaecology, University Hospital "Gaetano Martino," Messina; and [c] Department of Obstetrics and Gynaecology, Fondazione Cà Granda, Ospedale Maggiore Policlinico, Milan, Italy

Objective: To report the development of parasitic myomas after the use of a morcellator.
Design: Retrospective study.
Setting: Tertiary care referral center for the treatment of benign gynecologic pathologies.
Patient(s): Women undergoing surgery for uterine fibroids.
Intervention(s): Chart review.
Main Outcome Measure(s): Presence of parasitic leiomyomas.
Result(s): We identified four cases of parasitic myomas over the 3-year study period. Two out of the four were symptomatic. The prevalence of this complication, considering all women with whom the electric morcellator was used (n = 423) was 0.9% (95% CI, 0.3–2.2%). Considering exclusively the women who underwent myomectomy (n = 321), it was 1.2% (95% CI, 0.4–2.9%).
Conclusion(s): Laparoscopic myomectomy with the use of a morcellator is associated with an increased risk of developing of parasitic myomas. A thorough inspection and washing of the abdominopelvic cavity at the end of the surgery should be performed to prevent this rare complication. (Fertil Steril® 2011;96:e90–6. ©2011 by American Society for Reproductive Medicine.)

Key Words: Fibroid, laparoscopy, leiomyoma, morcellator, parasitic myoma

Parasitic myomas are rare pathologic phenomena, and although they have been known for some time (1), their etiopathogenesis is still uncertain. The classic view is that these lesions arise from pedunculated subserosal myomas that have for some reason, such as a torsion around its peduncle (2), become partially or completely separated from the uterus and started to receive an alternative blood supply from another source, such as omental or mesenteric vessels (2–7). An alternative pathogenetic mechanism is that these lesions may develop from metaplasia of the peritoneum. This appears particularly likely for leiomyomatosis peritonealis disseminata (8, 9).

In very recent years, a third intriguing pathogenetic mechanism with an iatrogenic origin has emerged. There have been some reports of parasitic leiomyomas in the peritoneum after laparoscopic myomectomies or hysterectomies with the use of electric tissue morcellator (10–17). In an attempt to shed light on this singular pathologic condition, we present four cases of iatrogenic parasitic myomas that occurred after laparoscopic procedures and a review of the literature on the topic.

Received February 12, 2011; revised May 15, 2011; accepted May 31, 2011; published online June 29, 2011.
G.C. has nothing to disclose. R.G. has nothing to disclose. G.C. has nothing to disclose. E.S. has nothing to disclose. A.P. has nothing to disclose.
G.C. and R.G. contributed equally to this article.
Reprint requests: Roberta Granese, M.D., Ph.D., Via Ducezio 15, Residence 74, 98124, Messina, Italy (E-mail: robertagr74@gmail.com).

MATERIALS AND METHODS

All patients undergoing surgery in the Gynaecological and Obstetrics Department of the Policlinico Hospital of Palermo between April 2007 and March 2010 were reviewed to identify those in whom parasitic leiomyomas had been detected. Our unit is a tertiary care referral center for Western Sicily for the treatment of benign gynecologic pathologies. During the study period, 256 laparoscopic hysterectomies and 345 laparoscopic myomectomies were performed. The morcellator was used in 102 (40%) and 321 (93%) cases, respectively. The indications for surgery were the presence of pelvic pain or abnormal uterine bleeding caused by different sizes or numbers of myomas or for a fibromatosus uterus, refractory to medical treatment. An electric Steiner Morcellator (Karl Storz) with 15-mm bladders was used when the size of the myoma exceeded 3 cm or after a subtotal hysterectomy.

All patients in our unit routinely give informed consent for the use of their data for research purposes. The study was approved by the local institutional review board.

0015-0282/$36.00
doi:10.1016/j.fertnstert.2011.05.095

We also carried out a review on parasitic leiomyomas after laparoscopic myomectomy or hysterectomy. To this end, we identified all English language medical papers published in the period 1990 to 2010 that are available on the PubMed electronic database.

RESULTS

We identified four cases of parasitic myomas that were diagnosed and treated in our department over the 3-year study period. The main characteristics of these cases are reported in Table 1. These patients had previously undergone laparoscopic myomectomy with an electric tissue morcellator used to extract the lesions. None of them had received gonadotropin releasing-hormone (GnRH) agonists preoperatively before laparoscopic myomectomy. When we considered all women who had undergone surgery with the use of an electric morcellator (n = 423), the prevalence of this complication was 0.9% (95% CI, 0.3–2.2%). Considering exclusively those who had undergone laparoscopic myomectomy with the use of a morcellator (n = 321), it was 1.2% (95% CI, 0.4–2.9%).

Two women (patients 1 and 3) underwent a laparotomic total hysterectomy after the initial laparoscopic myomectomy and before the subsequent diagnosis of the parasitic myomas (see Table 1). The average time between the initial laparoscopic myomectomy and the identification of the parasitic myomas was 69 months (range: 24 to 108 months). In patient 2, a pregnancy occurred during the latent period. Two out of four patients were symptomatic (see Table 1). In one case, the lesion was identified during the caesarean section; in the remaining three cases, the masses were diagnosed through ultrasound. In patient 1, magnetic resonance imaging was deemed necessary to confirm the diagnosis (Fig. 1). This first case also was investigated with laparoscopy as it was our first experience with the condition. In patient 4, the parasitic masses were found in conjunction with a symptomatic uterine fibroid. The number of lesions varied from one to five. The most frequent localizations were the pelvic parietal peritoneum, the anterior parietal peritoneum at the level of the abdomen recto muscles, and along the gastrointestinal tract. Others localizations included the left paracolic fossa and the peritoneum at the level of the promontory of sacrum. In three cases, removal was successfully achieved through laparoscopic surgery, and the morcellation was performed inside an endoscopic bag; in the case detected during the caesarean section, removal was through the laparotomic incision. No intrasurgical or postsurgical complications were observed. Histologic analyses on all samples confirmed the diagnosis of benign leiomyomas. Representative cases are illustrated in Figures 2 through 5.

Our review of the literature identified 13 published studies (10–16, 18–22). Nine were single case reports, two referred to two cases each, one referred to four cases, and only one reported on a case series of 10 women. Nine of the 13 studies were published within the last 5 years (since 2005). The main results of these studies are shown in Table 2.

Based on all the cases (including those from our report), we found the most common symptoms were abdominal and pelvic pain, a sense of a mass in the abdomen, and deep dyspareunia. In 29 (93%) of 31 women, the lesions were identified after a laparoscopic approach (95% CI, 81–99%); in 21 (68%) patients after a myomectomy (95% CI, 51–82%), and in 8 (26%) patients after a hysterectomy (95% CI, 13–42%). A morcellator was used in 27 (87%) of 31 women (95% CI, 73–96%). Lesions were commonly multiple and located either in the pelvis (70%) or abdomen (28%) and vagina

TABLE 1

Main characteristics of the patients with parasitic myomas.

	First surgery				Surgery for parasitic myoma				
Patient	Parity	Age (y)	Intervention	Use of morcellator	Age (y)	No. pregnancies since first surgery	Months since first surgery	Symptoms	Number (diameters)
Case 1	4	34	LPS myomectomy. then LPT hysterectomy[a]	Yes	41	0	72	Abdominal mass, abdominal/pelvic pain	3 (60, 45, and 15 mm)
Case 2	0	33	LPS myomectomy	Yes	35	1	24	No symptoms	1 (18 mm)
Case 3	0	27	LPS myomectomy. then LPT hysterectomy[a]	Yes	36	0	108	Dyspareunia, left-side tenderness	5 (35, 25, 7, 5, and 4 mm)
Case 4	1	42	LPS myomectomy	Yes	48	0	72	No symptoms	2 (60 and 43 mm)

Note: LPS = laparoscopic; LPT = laparotomic.
[a] In both cases, hysterectomy was performed 24 months after myomectomy.

Cucinella. Parasitic myomas. Fertil Steril 2011.