ELSEVIER

THE JOURNAL OF
MINIMALLY INVASIVE
GYNECOLOGY

Case Report

Large-Muscle Endometriosis Involving the Adductor Tight Compartment: Case Report

Massimiliano Fambrini, MD*, Karin Louise Andersson, MD, Domenico Andrea Campanacci, MD, Ermanno Vanzi, MD, Vincenzina Bruni, MD, Anna Maria Buccoliero, MD, Annalisa Pieralli, MD, Lorenzo Livi, MD, and Gianfranco Scarselli, MD

From the Departments of Gynecology, Perinatology, and Human Reproduction (Drs. Fambrini, Andersson, Bruni, Pieralli, and Scarselli), Orthopaedic Oncology (Dr. Campanacci), Radiodiagnostics (Dr. Vanzi), Human Pathology and Oncology (Dr. Buccoliero), and Radiotherapy–Oncology (Dr. Livi), University of Florence, Florence, Italy.

ABSTRACT Extrapelvic endometriosis is an uncommon condition but can involve nearly every organ, resulting in a wide range of clinical manifestations. Herein, we describe the case of a 45-year-old woman not a candidate for hormonal therapy who had cyclic pain in the left thigh associated with progressive impairment of walking ability. Clinical, instrumental, and laboratory data supported the diagnosis of endometriosis involving the adductor muscles compartment associated with ovarian endometriomas. Laparoscopic bilateral salpingo-oophorectomy and local wide excision in collaboration with an experienced orthopedic oncologist were performed, and definitive histologic analysis confirmed the diagnosis of endometriosis. The patient was pain-free at 6-month follow-up and demonstrated substantial improvement in ambulation and quality of life. Large-muscle endometriosis is a rare entity that can compromise musculoskeletal integrity and decrease quality of life. In this case, surgical excision in collaboration with an orthopedic oncologist was the cornerstone of treatment. Journal of Minimally Invasive Gynecology (2010) 17, 258–261 © 2010 AAGL. All rights reserved.

Keywords: Adductor muscles; Endometriosis; Musculoskeletal system; Pain; Surgical excision

Endometriosis is a common condition characterized by the presence of endometrial tissue outside of the uterine cavity. Pelvic endometriosis is described in 6% to 10% of fertile women and is usually associated with chronic pelvic pain, dysmenorrhea, dyspareunia, and infertility [1]. Extrapelvic endometriosis is an uncommon condition but can involve nearly every organ, resulting in a wide range of clinical manifestations [2]. We describe a large localization of endometriosis involving the adductor muscles of the thigh with subsequent functional deficit and impairment of the patient's quality of life.

The authors have no commercial, proprietary, or financial interest in the products or companies described in this article.

Corresponding author: Massimiliano Fambrini, MD, Department of Gynecology, Perinatology, and Human Reproduction, University of Florence, Viale Morgagni 85, 50134 Florence, Italy.
E-mail: maxfambrini@libero.it

Submitted July 15, 2009. Accepted for publication December 4, 2009.
Available at www.sciencedirect.com and www.jmig.org

doi:10.1016/j.jmig.2009.12.004

Case Report

A 45-year-old virgin woman was referred to our institution because of persistent pelvic pain and dysmenorrhea with onset 3 years after menarche. Previously, she had been referred twice for surgical removal of left inguinal endometriosis, and previously, laparoscopic removal of pelvic and ovarian endometriosis was performed. After surgery, no hormonal treatment was administered because of congenital glaucoma with subsequent complete blindness in the right eye and substantial vision reduction in the left eye.

Recent clinical history revealed deep pain in the left thigh while walking for the last 24 months, resulting in deterioration in ability to walk in the last few months. The pain was more pronounced during menstruation.

Physical examination revealed a painful area at superficial palpation in the medial region of the left thigh. Adductor muscle strength and function were remarkably impaired. Enlarged ovaries and moderate pain were documented at pelvic exploration. Transvaginal ultrasound demonstrated bilateral ovarian engagement by multiple endometriomas (<3 cm in

greatest diameter). Ultrasonography depicted a 5- to 7-cm poorly defined hypoechoic area in the deep adductor region. Results of ultrasound-guided fine-needle aspiration were inconclusive. Magnetic resonance imaging (MRI) with and without contrast medium showed an infiltrated area measuring 8.7 × 6.6 cm between the adductor magnus and gracilis muscles (Fig. 1). The mass showed evidence of a nonhomogeneous post-contrast enhancement on fast spin-echo T1-weighted coronal images, and T1-weighted axial MR images with fat saturation confirmed the post-contrast enhancement of the lesion. $^{[18F]}$Fluorodeoxyglucose positron emission tomography (FDG-PET) was performed in menstrual and intermenstrual phases, and demonstrated substantial uptake in both the ovaries, whereas the muscular compartment did not show any abnormality. The CA 125 level was 34.5 U/mL. At the end of the diagnostic workup, clinical, instrumental, and laboratory data supported the suspicion of deep musculoskeletal endometriosis. Surgical treatment consisting of wide excision of the muscle lesion and laparoscopic bilateral salpingo-oophorectomy was planned. Informed consent was achieved after comprehensive discussion with the patient.

Surgery was performed in collaboration with an experienced orthopedic oncologist (D. A. C.) via a transverse incision in the obturator region of left thigh (Fig. 2A). The pectineus, the long adductor, adductor magnus, and gracilis muscles were dissected from their insertions, and the obturator vessels and nerve were resected to the deep femoral vein. The mass was separated from the joint capsule of the left hip and removed after histologic examination of frozen sections proved the endometriotic nature of the lesion (Fig. 2B). The gross appearance of the removed tissue showed multiple small endometriotic foci in a context of extensive fibrosis (Fig. 2C). Bilateral salpingo-oophorectomy was performed at laparoscopy at the end of the surgery. Definitive histopathologic analysis confirmed the diagnosis of muscular and ovarian endometriosis (Fig. 2D).

At 6-month follow-up, the patient was pain-free and reported substantial improvement in ambulation even though muscle strength and abductor function were slighter inferior compared with the right limb. Combined oral calcium and vitamin D were prescribed to treat mild osteopenia. Because the patient did not experience menopausal symptoms, hormone therapy was not prescribed, at the recommendation of an ocular specialist.

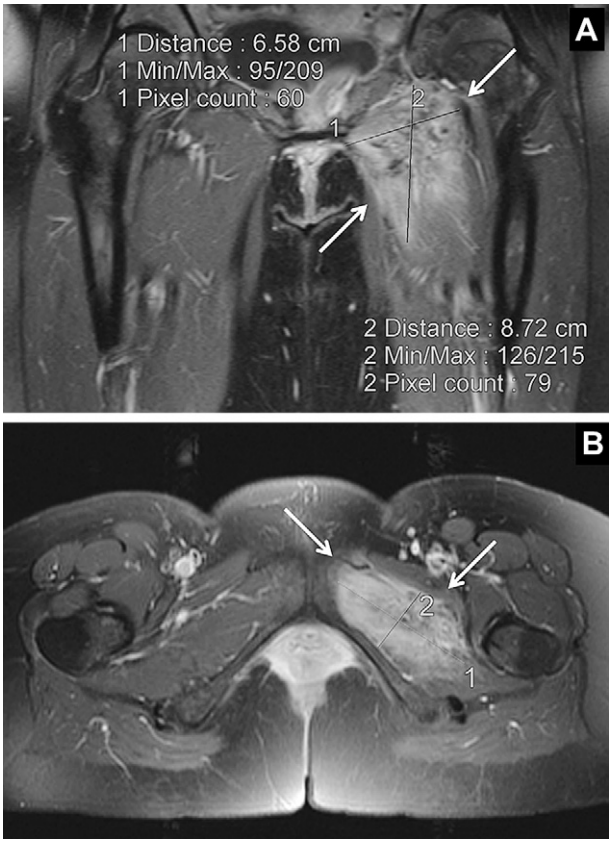

Fig. 1. A, Fast spin-echo T1-weighted coronal post-contrast magnetic resonance image shows nonhomogeneous enhancement of an 8.7 × 6.6-cm adductor magnus muscle mass (arrows). B, Fast spin-echo T1-weighted axial magnetic resonance image with fat saturation, which confirms the post-contrast enhancement of the lesion (arrows).

Discussion

In the past, musculoskeletal implants of endometriosis were rarely observed [3–6]. To our knowledge, this is the largest localization in the skeletal muscle ever described and the first report of endometriosis involving the adductor thigh compartment (according to PubMed database search).

The pathogenetic theories available today for endometriosis (i.e., retrograde menstruation, coelomic metaplasia, and immunologic alterations) are not sufficient to explain musculoskeletal endometriosis. As previously suggested [3,4], the potential spread of endometriotic cells via lymphatic or vascular routes after pelvic surgery to treat endometriosis is the most plausible explanation for muscular localization of endometriosis. However, Guida et al [6] described endometriosis of the soleus and gastrocnemius muscles in a patient with a negative personal history for any pelvic surgery or trauma, concluding that the etiopathogenesis of such an uncommon lesion remains an enigma. The present case demonstrates various and complicated aspects of the disease.

Preoperative assessment of muscle endometriosis is not standardized and can result in substantial delay in diagnosis, with potential damage to muscular tissue and peripheral nerves. Clinical data are of the utmost importance because a history of endometriosis is commonly associated with extrapelvic localizations of the disease. Moreover, although muscle endometriosis is a rare condition, it should always be considered in women of fertile age when the pain manifests cyclically. However, in most cases, diagnosis is established using imaging techniques. As for other extrapelvic compartments, MRI seems to be the method of choice for assessing muscle endometriosis. Previous observations [7,8] have reported a MRI appearance with low and high signals in T1- and T2-weighted images, respectively. The present