ELSEVIER

JMIG The Journal of Minimally Invasive Gynecology

Review Article

Lesions of the Broad Ligament: A Review

Debra S. Heller, MD*

From the Department of Pathology and Laboratory Medicine, Rutgers New Jersey Medical School, Newark, New Jersey.

ABSTRACT The differential diagnosis of lesions arising in the broad ligament is quite large. Many of these lesions can be clinically interpreted before surgery as adnexal or uterine neoplasms. Although some lesions are similar to those arising in other müllerian sites, there are unique lesions as well. The lesions are uncommon and may prove challenging to clinicians. The purpose was to review the scope of lesions affecting the broad ligament. A literature review was conducted. A Medline search was performed using the terms broad ligament, mesosalpinx, and mesovarium. A review of the scope of broad ligament lesions is presented to assist in developing a differential diagnosis if a patient with such a lesion is encountered. Journal of Minimally Invasive Gynecology (2015) 22, 1163–1168 © 2015 AAGL. All rights reserved.

Keywords: Broad ligament; Female genital tract; Uterine neoplasms

DISCUSS You can discuss this article with its authors and with other AAGL members at **http://www.AAGL.org/jmig-22-6-JMIG-D-15-00321**.

Use your Smartphone to scan this QR code and connect to the discussion forum for this article now*

* Download a free QR Code scanner by searching for "QR scanner" in your smartphone's app store or app marketplace.

The differential diagnosis of lesions arising in the broad ligament is quite large. Many of these lesions can be clinically interpreted before surgery as adnexal or uterine neoplasms. Although some lesions are similar to those arising in other müllerian sites, there are unique lesions as well. The lesions are uncommon and may prove challenging to clinicians. The purpose was to review the scope of lesions affecting the broad ligament. A literature review was conducted. A Medline search was performed using the terms broad ligament, mesosalpinx, and mesovarium. A review of the scope of broad ligament lesions is presented to assist in developing a differential diagnosis if a patient with such a lesion is encountered.

Embryology, Anatomy, and Histology

The broad ligament is a fold of peritoneum that drapes over the uterus and fallopian tubes. It has 3 components: the mesovarium; the mesosalpinx; and the portion below the adnexa, the mesometrium, which is referred to as the broad ligament in common usage. The broad ligament contains many structures, including vessels, the uterine arteries, the round ligaments, a portion of the ureters, the uteroovarian ligament medially and suspensory ligament of the ovary laterally, cardinal ligaments laterally, and uterosacral ligaments posteriorly.

Embryonic rests are normal components of the broad ligament and may give rise to some of the neoplasms that can occur there. Mesonephric (Wolffian) duct remnants may be seen in tissue adjacent to the fallopian tube, sometimes invested in muscle (Fig. 1).

Paramesonephric (müllerian) remnants may also be present in the broad ligament near the ovary [1] (Fig. 2). In addition, heterotopic hilar cell clusters as well as adrenal cortical rests (Fig. 3) may be incidental findings in the broad ligament, often in a paratubal location [2].

Broad Ligament Defects

Defects in the broad ligament may permit the small bowel, colon, adnexa, or ureter to pass through with subsequent strangulation although this is uncommon [3–5]. Defects may be congenital or acquired and may involve 1 leaf, both leaves with a through and through defect, or an outpouching of the intact peritoneum [5]. The Masters Allen (or Allen Masters) syndrome refers to traumatic laceration of the posterior leaf of the broad ligament, often after

The authors declare no conflict of interest.

Corresponding author: Debra S. Heller, MD, Department of Pathology-UH/E158, Rutgers New Jersey Medical School, 185 South Orange Avenue, Newark, NJ 07103.
E-mail: hellerds@njms.rutgers.edu

Submitted May 27, 2015. Accepted for publication June 21, 2015.
Available at www.sciencedirect.com and www.jmig.org

1553-4650/$ - see front matter © 2015 AAGL. All rights reserved.
http://dx.doi.org/10.1016/j.jmig.2015.06.019

Fig. 1

Mesonephric (Wolffian) remnant showing cuboidal epithelium with eosinophilic secretions.

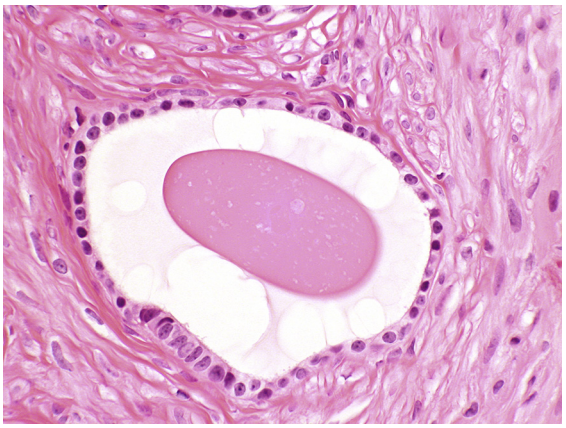
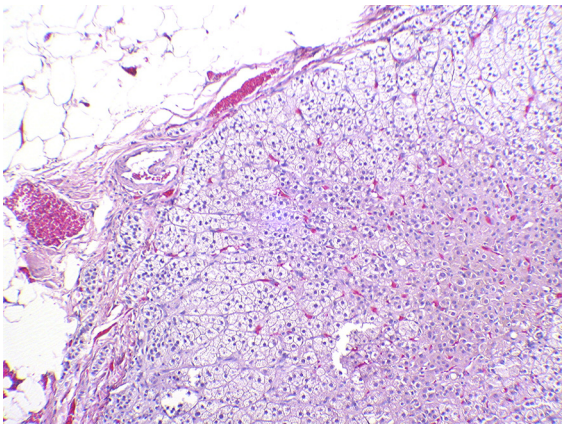


Fig. 3

Adrenal cortical rest shows cells with vacuolated cytoplasm in a well-circumscribed nodule.



childbirth, and is associated with an abnormally mobile cervix. It may cause pelvic pain and dyspareunia [6]. In 1 case, Masters Allen syndrome presented with signs suggestive of acute peritonitis [6]. It has been suggested that this peritoneal tear may permit development of deep infiltrating endometriosis [7]. It has also been argued that underlying endometriosis rather than pregnancy is the etiology of the acquired defect [8].

Hemorrhagic Lesions of the Broad Ligament

Pregnancy is a time of increased risk for the broad ligament. Hemoperitoneum has been reported after rupture of a broad ligament varix [9] as well as with rupture of the broad ligament and uterine vessels [10]. A spontaneous broad ligament hematoma has also been reported in the absence of pregnancy; it was attributed to venous injury associated with the combination of large uterine myomas and the exertion of mowing a lawn [11].

Fig. 2

Paramesonephric (müllerian) remnant showing a lining similar to the fallopian tube.

Benign Tumors and Tumorlike Lesions

Intraligamentous Pregnancy

Ectopic pregnancy arising in the broad ligament is rare and is usually associated with pregnancy loss and maternal hemorrhage although a rare viable pregnancy has been reported [12]. The authors postulated that the pregnancy was originally a tubal ectopic pregnancy that had ruptured and reimplanted in the broad ligament. A case in a woman who underwent in vitro fertilization after 2 prior ectopic pregnancies had resulted in bilateral salpingectomies was postulated to have arisen either by rupture of the uterus during the in vitro fertilization procedure or recanalization of the fallopian tube stump [13].

Rare cases of uterine rupture with expulsion of the fetus into the broad ligament have been reported; Dhont et al [14] report a case in which a second trimester termination using prostaglandins was complicated by this occurrence.

Broad Ligament Cysts

Cysts of the broad ligament may be of a mesonephric or paramesonephric origin with epithelium similar to that described for the corresponding remnants or a mesothelial origin. Most of these cysts are paramesonephric (müllerian) [15]. Paratubal/paraovarian broad ligament cysts represent about 10% of adnexal masses [16]. The distinction between paratubal and paraovarian is sometimes arbitrary with interchangeable usage, and these cysts are present in the broad ligament between the tube and ovary. In terms of distinguishing cysts from rests, which can be dilated, cysts have been described as grossly visible lesions [1]. Most of these cysts are incidental findings, but they may torse with an