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CASE REPORT

Vaginal teratoma: A case report and review of the literature

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Introduction

Dermoid cysts (benign cystic teratoma) are benign germ-cell tumours that contain well-differentiated derivatives of all three germ layers (Sharma et al. 2012). They usually occur along the line of embryonic fusion over the head and neck region, the mediastinum and the presacral area and are present at birth or develop in early childhood. Although most teratomas occur in the midline, they may present atypically as vaginal dermoid cysts (Sharma et al. 2012; Siu et al, 2003).

A true cutaneous dermoid cyst is formed by ectodermal cells buried along the lines of closure of embryonic clefts and sinuses by skin fusion during the embryonic stage, these cells are able to transform into hair, skin and appendages. If dermoid cyst contains mesodermal cells, bone, teeth and cartilage may develop. If teeth are found in the vaginal dermoid cyst, it is known as 'vagina dentata' (Sharma et al. 2012; Siu et al, 2003). Mention of vagina dentata is found in the creation myths and folk stories of many cultures such as Native Americans in North America and different populations in Russia, Japan, India, Samoa and New Zealand. After the 19th century, these stories were interpreted as the 'castration anxiety of man' (Jackson, 1971). Although vagina dentata is a universal symbol of men's fear of women, vaginal dermoid cyst is quite rare. To the best of our knowledge, there are 7 cases of vaginal dermoid cysts published thus far in the English literature (Sharma et al. 2012). We present a case of a vaginal dermoid cyst along with a review of the literature.

Case report

Clinical history

A 15-year-old girl presented with a protruding mass from the hymenal ring. Her height was 160 cm and she weighed 40 kg. She had a history of regular menstrual cycles, was Tanner stage 5 in breast development and had a normal body hair growth pattern. There was no history of in utero exposure to diethylstilbestrol, radiotherapy or any medical disorders. The ultrasonographic findings of the pelvis were normal: uterus ($60 \times 55 \times 45$ mm), right ovary ($25 \times 20 \times 20$ mm) and left ovary ($20 \times 18 \times 15$ mm) with normal follicular appearance. Gynaecological examination revealed both soft and semisolid, polypoid mobile structures with a smooth surface protruding through the introitus (hymenal ring). The polypoid tissue measured $5 \times 4 \times 3$ cm with a stalk that was 0.5 cm in width attached to the lower lateral wall of the vaginal submucosal tissue. Complete excision of the mass was performed under local anaesthesia. The patient's post-operative course was uneventful.

Histopathological findings

Macroscopically, a polypoid structure measuring $5 \times 4 \times 3$ cm was described with necrotic margins. The cut surface demonstrated three well-demarcated areas of cartilage tissue embedded within the structure. The histopathological examination revealed a polypoid tissue covered by squamous epithelium with some reactive changes. Subepithelial connective tissue contained irregular-shaped, thin-walled, dilated glandular structures and a few islands of mature cartilage tissue. There were no other adult tissues. No immature elements were also seen. The diagnosis was a mature teratoma, shown in Figure 1.

Discussion

Vaginal cysts are not uncommon findings in clinical practice – epidermal inclusion cysts, Gardner's duct cysts and Bartholin's duct cysts are common types. However, dermoid cyst, ectopic ureterocele and paraurethral cyst is rare types (Siu et al, 2003). Dermoid cysts are a special form of mature teratoma and they represent the most common benign germ-cell tumour and the most common neoplasms of the ovary in young women (Sharma et al. 2012). Dermoid cysts are usually present at birth and continue to grow in size with age. The cyst is similar to those present on skin tissue and can contain fat, and occasionally hair, bone, nails, teeth, eyes, cartilage and thyroid tissue. On occasion, teeth can be found within the vaginal dermoid cyst, which is why they are called 'vagina dentata' (Sharma et al. 2012; Siu et al, 2003). Although vagina dentata appears in the creation of myths and folkloric stories of many cultures (Jackson, 1971), a dermoid cyst of the vagina is quite rare.

Vaginal dermoid cysts were first described in 1899 by Stokes, who reported a 44-year-old woman who underwent removal of a 1-cm cyst located within the hymen. The cyst contained numerous sebaceous glands and a few hair follicles (Stokes 1899). Curtis (1913) described an ulcerated orange-sized necrotic cyst containing hair and sebaceous materials in the vaginal mucosa. In another case report, a 4-inch cyst was expelled from a woman's vagina following delivery of her second child. The cyst contained thick sebaceous material with matted hair and had been attached to the vaginal wall by a narrow stalk (Johnston 1939). In still another report, excision of a painful right vaginal wall cyst revealed it to be a dermoid cyst confirmed by histopathological examination (Hirose et al, 1991). Subsequently, Siu et al (2003), Al-Shahrani and Heywood (2006) and Sharma et al. (2012) reported three cases of paravaginal dermoid cysts. Our case differed from the others in that 1) the girl was an adolescent; 2) the

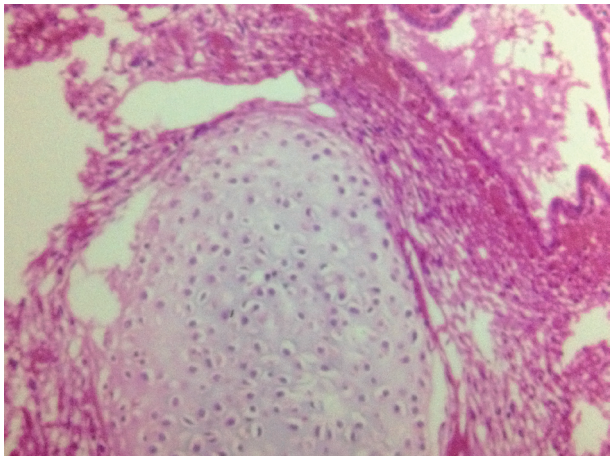


Figure 1. Microscopic appearance of vaginal teratoma. The dilated mature glandular tissue and mature cartilage tissue. (Figure 1. haematoxylin and eosin; ×125).

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mass was a smooth-based multiple polypoid mass with a stalk and 3) the cyst was not located in the paravaginal space but rather protruded from the hymen.

Siu et al (2003) noted that cutaneous dermoid cysts and epidermal inclusion cysts of the vagina had similar characteristics. During the repair of an episiotomy, skin appendages may become buried in the wound leading to features that are consistent with a dermoid cyst. However, this latter case involved a 15-year-old adolescent girl with no history of sexual intercourse. Thus, the aetiology of vaginal dermoids remains to be elucidated.

Vaginal teratoma is a rare and benign condition that can be diagnosed by histopathological examination and treated with surgical excision.

***Declaration of interests*:** The authors report no declarations of interest. The authors alone are responsible for the content and writing of the paper.

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