

## Median Raphe Cyst of the Penis

Hasan Deliktas\*, Hayrettin Sahin, Ozgur Ilhan Celik, Omer Erdogan

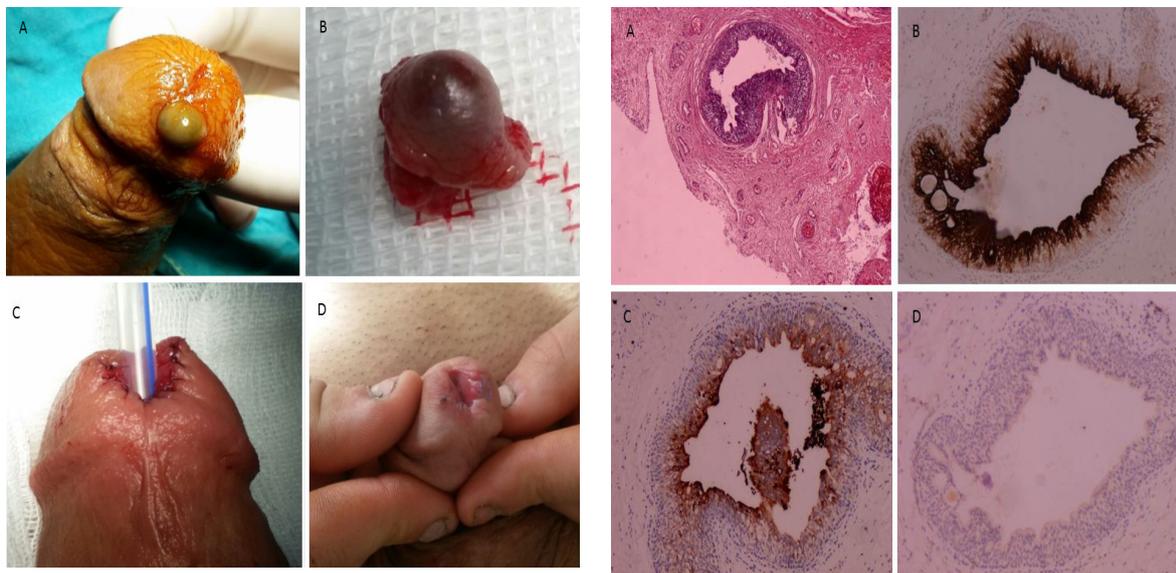
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### INTRODUCTION

Median raphe cysts (MRC) are rarely seen cysts that develop from the median raphe in the male external genital region. These cysts might develop in any area, including the parameatus, glans penis, penile shaft, scrotum and perineum on the ventral surface of the genital region.<sup>(1,2)</sup> A differential diagnosis must be made from other lesions such as glomus tumors, dermoid cysts, pilonidal cysts, epidermal inclusion cysts, urethral diverticula and steatocytomas that originate in the genital region.<sup>(2)</sup>

### CASE REPORT

A 26-year-old male presented with a mass on the penis that had been growing slowly for 3 years; although the mass was painless, it caused discomfort during urination and sexual relations. In the physical examination, a penile mass 20 × 20 mm in size with regular borders was determined to be extremely close to the external meatus (Figure 1A). Except for the penile lesion, the physical and abdominal examinations were normal. The full urine test and full blood count results were normal. By penile ultrasonography, a cystic mass, 10 × 20 × 20 mm in size, was determined. Under spinal anaesthesia, the mass was excised, and meatoplasty was performed (Figure 1B, C, D). The patient was discharged on postoperative day 1. In the pathology examination, there was cyst formation in the hematoxylin-eosin staining, with a lining of pseudostratified columnar epithelium in the deep dermis under a normal epidermis (Figure 2A). Focal squamous metaplasia in the pseudostratified columnar epithelium could be observed. In the immunohistochemical study, the epithelial cells of the cyst lining were stained positive with cytokeratin (CK) 7 (Figure 2B) and carcinoembryonic antigen (CEA) (Figure 2C) and negative with cytokeratin 20 (Figure 2D). The lesion was diagnosed as an MRC from these findings. At the 1-month follow-up, the complaints



**Figure 1.** (A) The cyst at the parameatus of the penis of a 26-year-old patient. (B) The image of the cyst after the complete excision. (C) The image of the meatoplasty. (D) The image of the penis after the catheter removed.

**Figure 2.** (A) Cyst formation with a lining of pseudostratified columnar epithelium (hematoxylin-eosin, original magnification × 40). (B) The epithelial cells of the cyst lining were stained positive with cytokeratin 7 (original magnification × 200). (C) The epithelial cells of the cyst lining were stained positive for carcinoembryonic antigen (original magnification × 200). (D) The epithelial cells of the cyst lining were stained negative with cytokeratin 20 (original magnification × 200).

Department of Urology, School of Medicine, Mugla Sitki Kocman University, Mugla, Turkey.

\*Correspondence: Mugla Sitki Kocman University, School of Medicine, Department of Urology, Mugla, Turkey.

E-mail: hasandeliktas@mynet.com.

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of discomfort during urination and sexual relations had resolved. No recurrence or narrowing of the meatus was determined during the 1-year follow-up period of the patient.

## DISCUSSION

Median raphe cysts are cysts that develop on the median line in the male genital region any area from the anus to the external meatus.<sup>(2)</sup> The vast majority develop on the penile shaft and in the parameatal section.<sup>(3)</sup> Median raphe cysts are hypothesised to originate from a defect that is created during the embryological development of the male urethra.<sup>(2,4)</sup> In the histopathological differential diagnosis, an MRC should be distinguished from apocrine cystadenomas, mucinous cysts and epidermal cysts. In an MRC, the lining primarily consists of pseudostratified, 1- to 4-cell-thick columnar epithelium. Immunohistochemically, the epithelial cells are CK 7 and CEA positive and CK 20 negative.<sup>(5)</sup> In our case, the cyst lining was entirely composed of pseudostratified columnar epithelium that had positive staining with CK 7 and CEA and negative staining with CK 20; it was diagnosed as MRC. Although the majority of median raphe cysts are present from birth, they remain undetectable until adolescence or adulthood. Because the lesions are generally asymptomatic, there is no impairment of urinary or sexual function.<sup>(2)</sup> Median raphe cysts could be followed up without surgical excision in asymptomatic patients, particularly in children.<sup>(6)</sup> However, in some patients, they cause pain with urination and haematuria.<sup>3</sup> In addition, pain might occur in the event of trauma or infection.<sup>(7)</sup> Treatment should be applied to patients who experience symptomatic or cosmetic discomfort. Because the lesion had a parameatal location in the current case, it was causing discomfort during urination and sexual relations. In the treatment of symptomatic median raphe cysts, the mass should be excised, and the patient must be followed up for the evaluation of recurrence.<sup>(3)</sup> Aspiration alone is not recommended in the treatment of median raphe cysts.

In the treatment of large cysts and those with a deep localisation, marsupialisation and de-roofing are performed. This surgical procedure results in cosmetically undesirable open-ended sinuses. When possible, this surgical procedure should be avoided.<sup>(4)</sup> In a literature review, except for a limited number of patients in which an urethrocutaneous fistula occurred, there are no reports of surgical complications when appropriate mass excision is applied.<sup>(3)</sup>

Parameatal-located median raphe cysts might cause problems such as discomfort during sexual intercourse, difficulty with urination and cosmetic discomfort. Meatoplasty might be applied safely if the cyst is near the external meatus. In the treatment of median raphe cysts, complete excision is a safe and effective treatment choice.

## CONFLICT OF INTEREST

None declared.

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