ARTICLE INFO

ABSTRACT

This paper presents and describes the anatomical variation of the left vertebral artery originating from the arch of aorta as a case report. This variation was found in one of the male cadaver during routine dissection in anatomy department. Although, the vertebral artery is classically described as the first branch of the ipsilateral subclavian artery, multiple variations in the origin of that vessel have been reported in the literature. The incidence of anomalous origin of the left vertebral artery from the aortic arch ranges between 1% and 5.8%. In this case we observed an atypical origin of the left vertebral artery. Atypical origin was compared to the typical origin of the left vertebral artery in the anatomical literature. We compare our findings with different possible variations of the origin of the left vertebral artery reported in the literature. The clinical importance of variation is discussed.

1. Introduction

Hemospermia, also called as haematospermia is a relatively common urological condition among adult and sexually active men. However its exact prevalence is unknown. Hemospermia is prevalent in young males with a mean age of 37 years [1-5]. Urogenital inflammation and infection are often considered the most common cause of hemospermia in this group [6]. Ejaculatory duct stones are uncommon cause of hemospermia. Diagnosis of ejaculatory duct stones can be done by trans-rectal ultrasonography (TRUS). However magnetic resonance imaging (MRI) is more reliable and accurate in diagnosing ejaculatory duct stones and may sometimes also give an insight into the pathology. Herein we describe MRI findings in a case of left ejaculatory duct calculus causing hemospermia in a young male.

2. Case Description

A 29 years old male patient presented to the urologist with chief complaints of haematuria, hemospermia and frequency of micturation. No history of fever or burning micturation was present. Hemospermia was present since last 2-3 years. History of haematuria was present since last 2-3 weeks. The digital rectal examination was unremarkable. Urine cytology report showed few red blood cells and was negative for malignant cells. Urine culture/acid-fast bacilli, blood sugar, renal function tests, and serum PSA were within normal limits. There was no evidence of hypercalcemia or any other related metabolic abnormality. The patient had undergone semenogram 45 days back which was normal. For further evaluation X-ray, TRUS and MRI were advised.

X-ray showed presence of radioopaque shadow (black arrow) in the midline in the region of urethra (Figure 1). TRUS revealed presence of periurethral calcification. However no definite calculus could be demonstrated. MRI revealed presence of dilated left ejaculatory duct in prostatic region with presence of T1 and T2 hypointensity (black arrows) suggestive of calculus (Figure 2). The findings were confirmed on urethroscopy.

Figure 1: X-ray AP view of the pelvis showing the presence of radioopaque shadow in the midline in the region of urethra (black arrow).
Discussion

Hemospermia is usually a benign self-limiting condition; however it provokes great concern and anxiety in sexually active patients. Hemospermia may be secondary to inflammation, infection, ductal obstruction or cysts, benign neoplasm, vascular abnormalities, systemic or iatrogenic factors and rarely malignant tumors [6].

Seminal vesicular and/or ejaculatory duct calculi or calcification are extremely rare with very few cases reported in the literature. Their presentation may be diverse ranging from a spectrum of loin pain to infertility, hemospermia, painful ejaculation to epididymo-orchitis and urinary tract infection [6].

Stasis of the ejaculatory duct has been considered the most important etiological factor. Stasis can be due to conditions ranging from benign stricture (due to infection) to serious causes like malignancy. Other conditions that may be associated with ejaculatory duct calculi include seminal vesicle cysts/hypoplasia, obstructive azoospermia/infertility, hemospermia, chronic prostatitis and genitourinary tuberculosis.

The diagnosis of ejaculatory duct calculi should be suspected on a combination of hemospermia and digital examination. TRUS can be considered a safe, noninvasive and relatively inexpensive method, which allows clear images of the reproductve system structures [6]. TRUS has an accurate diagnostic rate of between 74% and 95% for the evaluation of hemospermia [5] and has an established role in the detection, differential diagnosis and confirmation of genitourinary pathologies of the prostate, seminal vesicles, and ejaculatory duct [7]. However many cases which remain obscure on TRUS benefit from MRI especially with endorectal coil. MRI has the ability to accurately identify hemorrhage within the seminal tract due to its characteristic signal behavior. MRI should be considered the modality of choice for the evaluation of patients with persistent indeterminate hemospermia [6]. On MRI stones appear as hypointense filling defect on T1 and T2 weighted images, especially T2 images. Associated findings may include dilatation of ejaculatory ducts, seminal vesicle dilatation, seminal vesiculitis etc.

Hence we conclude that ejaculatory duct calculi are an important cause of hemospermia. Any patient presenting with symptoms of hemospermia should undergo an MRI examination to rule out ejaculatory duct calculi and/or other pathological conditions affecting the genitourinary tract to make the correct diagnosis.

Sources of support: Nil
Acknowledgements: Nil
Conflict of interest: Nil

REFERENCES