

BILATERAL ORCHITIS AND TESTICULAR ENLARGEMENT

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INTRODUCTION

The major components of the external male reproductive system consists of the penis, scrotum, testes, and the epididymis. The average length of the male testis is 4 cm. The testes develop in the abdominal cavity of the fetus and descend through the processus vaginalis in the abdominal wall before birth, finally halting their descent in the scrotum. From the most internal layer, the testis is covered by the tunica albuginea, visceral tunica vaginalis, and the parietal tunica vaginalis. These structures, along with the ductus deferens, testicular artery, pampiniform plexus, the genital branch of the genitofemoral nerve, and other nerves and arteries, are surrounded by the internal spermatic fascia¹. This case report documents the presence of bilateral orchitis and testicular enlargement with unexplained differences between the testes.

METHODS

During a routine dissections of a 76-year-old male cadaver, bilateral orchitis, bilateral testicular enlargement, a left-sided varicocele, and a right-sided indirect inguinal hernia were discovered. Following the dissection, photographic images and measurements of these structures were obtained and a literature review was performed. This review did not reveal any cases of the same or similar nature. This study attempts to further the understanding of the causes of enlarged testes and the relationship between gastrointestinal and reproductive disorders.

FINDINGS

The right testis in this case report was measured at 10 cm and the left testis was measured at 11 cm, both nearly three times the size of an average male testis². Removal of the outer layers of the scrotum revealed solidified green, yellow, and grayish purulent exudate surrounding both testes between the layers of the parietal and visceral tunica vaginalis (Figure 1). While the testes showed some similarities, the presentation of both testis also differed greatly. The left testis was easily compressible and had a large varicocele (Figure 2), while the right testis was turgid and, when dissected, contained a large hematoma (Figure 3). Furthermore, the inferior pole of the left testis had extensive fibrous scarring at the epididymal-testis junction and the anterior surface of left testis had two small nodular plaques protruding from the tunica albuginea. In addition to the findings within the reproductive system, an indirect inguinal hernia was identified within the right spermatic cord (Figure 4). The cadaver did not have any documented history of sexually transmitted infection or testicular torsion. He did, however, have a history of benign prostatic hyperplasia without lower urinary tract symptoms. We believe the cause of the bilateral enlarged testes were from two different sources rather than a single disease or incident due to the stark differences between the two.

IMAGES



Figure 1. Purulent exudate over the right testis

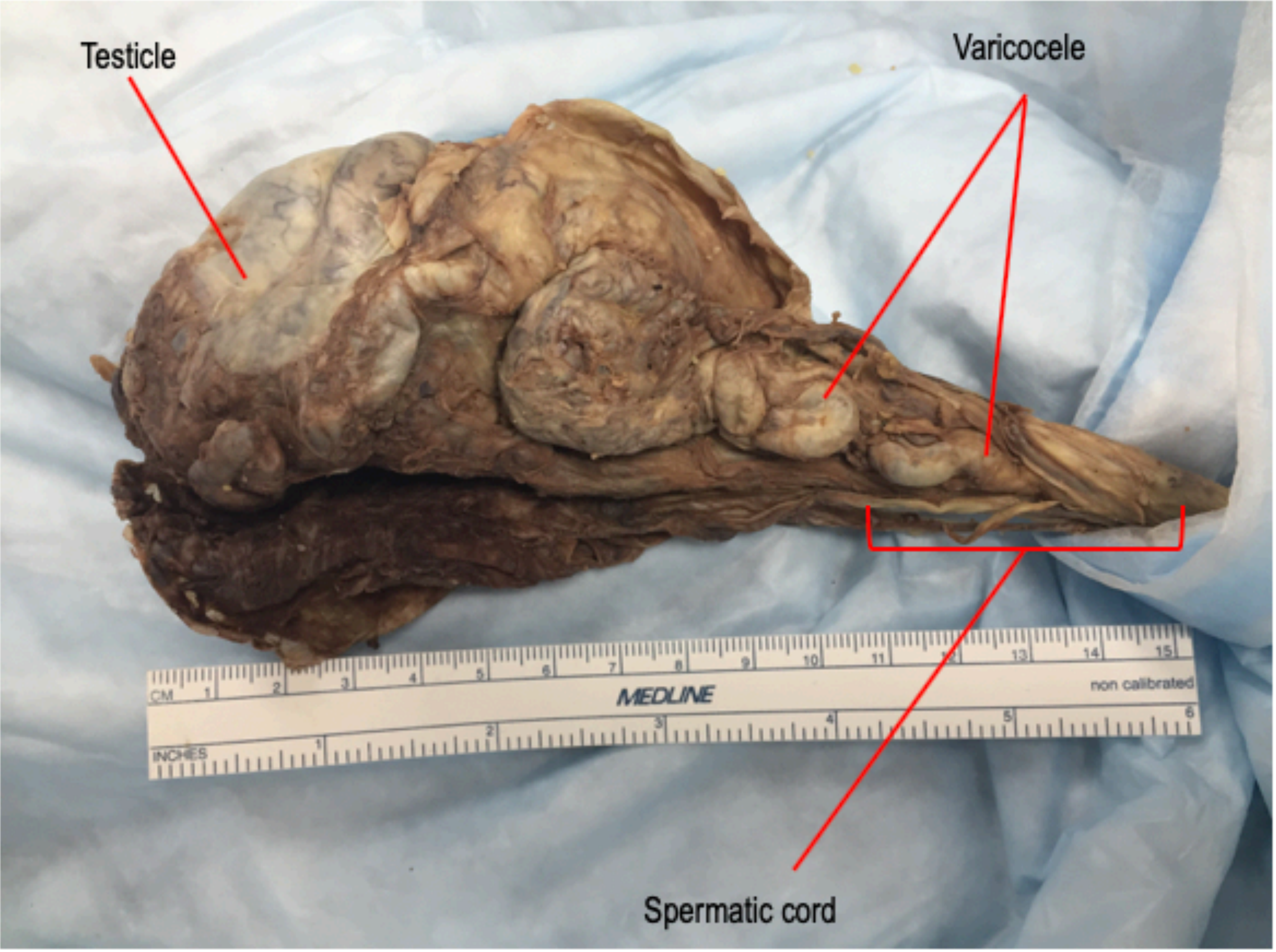


Figure 2 . Left testicle with infection and spermatic cord containing ductus deferens, testicular artery, pampiniform plexus, and testicular nerve (collective name for all nerves in spermatic cord – autonomics and somatics)

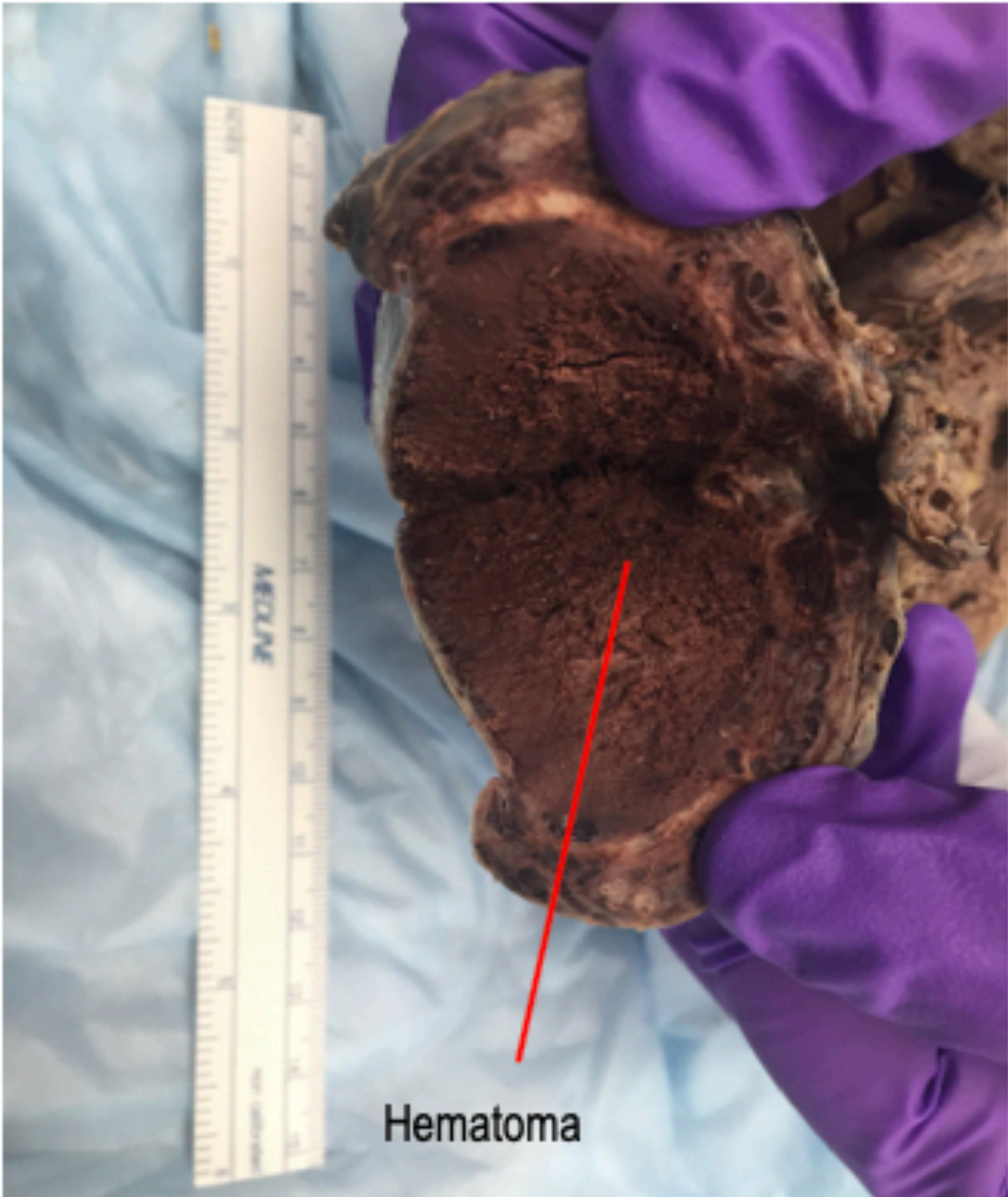


Figure 3. Sagittal cross-section of the right testis

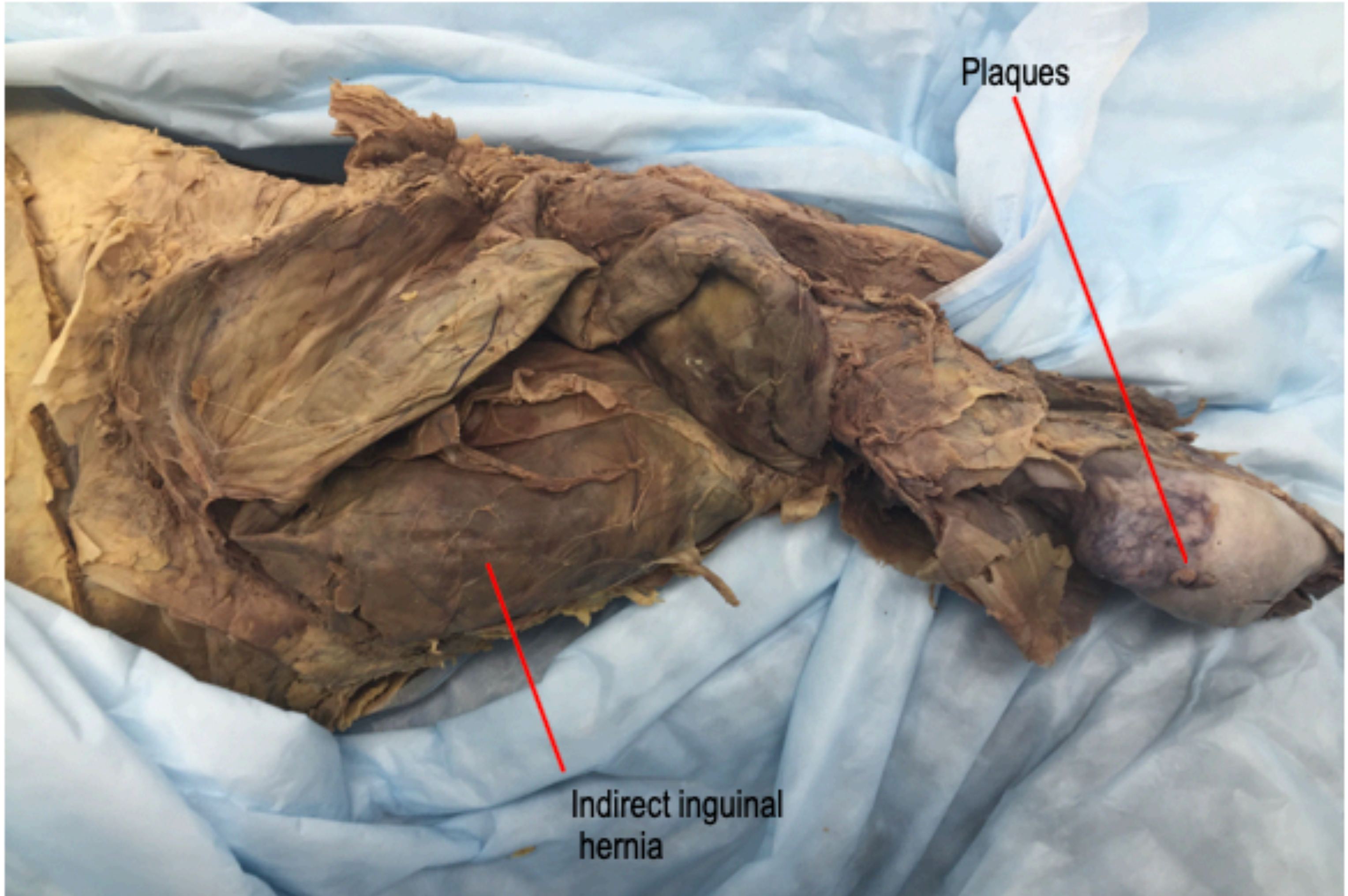


Figure 4. Right testicle with indirect inguinal hernia

DISCUSSION

These abnormalities were accompanied by a large, right-sided, indirect inguinal hernia consisting of the large intestine that descended into the scrotum. If the processus vaginalis does not close completely, this can increase the susceptibility of an indirect hernia occurring³. The literature review did not yield any results documenting bilateral patent processus vaginalises leading to bilateral orchitis. One hypothesis that could lead to this condition is that the donor had congenital bilateral patent processus vaginalis, which would make him more susceptible to indirect inguinal hernias³. With additional risk factors, including old age and decreased immune function, abdominal infections could also lead to orchitis.

Other causes of the infection could include an undiagnosed sexually transmitted infection, an undiagnosed autoimmune disease, or the Mumps virus⁴. Most of the literature review focused on blunt trauma as the source for testicular hematomas⁵. Physicians should consider the possibility of unilateral or bilateral patent processus vaginalises when treating patients with abdominal infections that have a history of indirect inguinal hernias or cryptorchidism.

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