

MALE SYSTEM

GENITAL

MUSEUM CATALOGUE

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MALE GENITAL SYSTEM

INTRODUCTION

The examples of pathology of the male genital system in the museum are for the most part quite straightforward, incorporating testicular tumours (almost always malignant), disorders of the testicular adnexae and spermatic cord and occasional examples of other pathologies. The prostate is covered in another section.

The adult testis is an ovoid structure approximately 4cm long and 3cm wide. Its contents include seminiferous tubules, in which spermatogenesis takes place, and Leydig cells, which make testosterone. It is covered by a fibrous capsule, the tunica albuginea, and most of its surface is surrounded by a mesothelial lined sac, the tunica vaginalis, derived from abdominal peritoneum, as the testis descends during fetal life from the posterior abdominal wall where it forms. As it descends, it carries its blood supply and lymphatic drainage with it. Sperm flow via the rete testis and ductuli efferentes to the epididymis, and thence to the vas deferens. The vas ascends in the spermatic cord and enters the pelvis. The ducts of the seminal vesicles, located behind the lower bladder and prostate, drain into the vas, to form the ejaculatory ducts, which drain into the prostatic urethra.

Any comments on this catalogue are welcome. Please contact a member of the department.

HOW TO USE THIS CATALOGUE

This catalogue can be used as a tool to develop your knowledge, as well as provide an opportunity for revision.

It is divided into:

- Introduction (page 71).
- Index (page 72). Examples of specific diagnoses can be found via the index.
- Core and classic disease processes (pages 73-79). This gives examples and discussion of core and/or classic diseases of the male genital system. These are the specimens that students should focus on being able to identify initially. However, it depends to some extent on what you have covered in lectures and practical classes or resource sessions as to what you should know. Some of the specimens and discussion are directed more towards clinical medical students.
- Main catalogue (pages 80-85). This section covers the specimens in numerical order. Questions and/or comments accompany some of the specimens to help you expand your knowledge. In order to fit more specimens in the museum, not all of the pots are in numerical order on the shelves, and large specimens are often found on the bottom shelves.

You might find it useful to work quietly with a few friends and to have a few textbooks handy (e.g. pathology, medical, anatomy). You will also find that you can learn some anatomy and clinicopathological correlation from the specimens and information given.

You do not have to examine every single specimen in the museum. However, just as in clinical practice, you will not become proficient in diagnosing something if you have only seen one case. Exposure to a variety of cases (specific diagnoses can be found via the index) to experience the variability in morphology will help your learning greatly. In general red and blue dots indicate basic and straightforward cases, whereas yellow dots indicate a more complex case. This is not a hard and fast rule, and you will find yellow dot specimens turning up in resource sessions/practical classes and even exams, if they represent classic pathology.

As some of these specimens are very old (some up to 80 years), some of the investigations and treatments mentioned may be out of date.

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CASE 25224 Leydig cell tumour

CORE AND CLASSIC DISEASE PROCESSES

PENIS: CARCINOMA

CASE 11128/83

Clinical information

The patient was a man aged 77.

Describe the specimen

The specimen consists of the distal penis with glans and the external urethral meatus that are partly destroyed by a pale invasive tumour with irregular margins.

What is the diagnosis?

Carcinoma of the penis.

What histological type of tumour is this likely to be?

Squamous cell carcinoma

What are the risk factors for this disease?

Delayed or absent circumcision and/or poor personal hygiene (-> increased exposure to potential carcinogenic agents in smegma), human papillomavirus infection, cigarette smoking and atrophic lesions of the glans - lichen sclerosus et atrophicus (possibly). Some tumours may arise from pre-existing carcinoma in situ.

TESTIS: HYDROCELE

CASE 17812

Clinical information

The patient was a man aged 64 who died from a massive right middle cerebral infarct.

Describe the specimen

The specimen is of the right testis and tunica vaginalis. The latter is greatly distended. The appendix of the testis projects into the hydrocele at the upper pole of the testis.

What is the diagnosis?

Hydrocele of the testis

What is the pathogenesis of this disease?

This results from accumulation of clear fluid within the tunica vaginalis. Often there is no known cause.

What is the tunica vaginalis and how does it form?

The tunica vaginalis is a mesothelial-lined sac, derived from the abdominal peritoneum, that surrounds much of the testis. In the fetus, the testis forms on the posterior wall of the abdomen. During fetal life it descends into the scrotum, taking a covering of abdominal peritoneum with it. The communication with the abdominal cavity becomes obliterated.

TESTIS: VARICOCELE

CASE 19364

Clinical information

The patient was a man aged 52 who died of carcinoma of the lung.

Describe the specimen

The specimen is of a testis and spermatic cord. The veins of the spermatic cord are dilated and tortuous.

What is the diagnosis?

Varicocele.

What is the pathogenesis of this disease?

Varicoceles develop from higher than normal hydrostatic pressures in the veins in the spermatic cord. The majority of varicoceles form on the left side, thought to be due to the fact that the left testicular vein drains into the left renal vein, which is at higher pressure than the IVC into which the right testicular vein drains.

TESTIS: SYPHILITIC GUMMA

CASE 9383

Clinical information

The patient was a middle-aged man who presented with nodules in the subcutaneous tissues of the arms and legs. The latter were associated with bony changes on x-ray. The liver and spleen were enlarged and there was an enlarged testicle. The Wassermann reaction was positive.

Describe the specimen

The specimen consists of the testis that is enlarged, measuring 7 x 5 x 5cm. The bulk of the testis has been replaced by pale variegated necrosis. A narrow rim of testicular tissue survives around the periphery.

What is the diagnosis?

Gumma of the testis

What is a gumma and in what stage of syphilis do they occur?

A gumma is a localised area of necrotising granulomatous inflammation seen in the tertiary stage of syphilis. They may occur in any tissue.

What would be seen on histological examination of the affected area?

There would be necrosis surrounded by lymphocytes, epithelioid macrophages and giant cells.

TESTIS: SEMINOMA

CASE 10462

Clinical information

No clinical information is available except that this is a surgical specimen.

Describe the specimen

The specimen consists of a testis together with an oval piece of scrotal skin and distal spermatic cord. The testis is enlarged and replaced by an ovoid neoplasm measuring 10 x 7 x 6cm. It is uniformly pale in appearance except for some central necrosis.

What is the diagnosis?

Seminoma of the testis

In what age group does this lesion usually arise?

These usually arise in the 30s and 40s.

Into what category of testicular tumours does this fall?

This is a germ cell tumour of the testis.

What are the categories of testicular tumours?

Testicular neoplasms fall into several main groups:

- Germ cell (commonest): demonstrating differentiation of cells involved in embryogenesis. The commonest of these is the seminoma (of which there are several subtypes). Others include embryonal carcinoma, yolk sac tumour, choriocarcinoma and teratoma and mixed forms. These non-seminomatous germ cell tumours (NSGCT) typically show a heterogenous cut surface with necrosis, whereas seminomas are generally fairly homogenous in appearance but also show areas of necrosis.
- Sex cord-stromal: demonstrating evidence of differentiation along the lines of one of the sex cord or stromal elements. The main ones are Leydig cell tumours (specimen 25224) and Sertoli cell tumours.
- Mixed forms
- Other, including lymphoma

What do Leydig cells do?

Make testosterone.

What factors predispose to the development of testicular tumours?

Undescended testes, undefined genetic factors, disorders of testicular development.

To what lymph nodes do the lymphatics from the testis drain? Why?

The para-aortic nodes. They drain here, rather than to the local inguinal nodes, because the testes develop on the posterior abdominal wall. They then descend during fetal life into the scrotum, 'dragging' their blood supply, nerve supply and lymphatic drainage with them. The lymphatics from the scrotal skin and fasciae drain to the superficial inguinal lymph nodes.

EPIDIDYMITIS: TUBERCULOUS EPIDIDYMITIS

CASE 19700

Clinical information

The patient was a man aged 39 who had had tuberculosis since the age of 8 years, affecting the lungs, genito-urinary tract and the left wrist. Six months before death he was admitted to hospital with a urinary fistula secondary to a left nephro-ureterectomy 2 months earlier. Increasing uraemia necessitated peritoneal dialysis. A right cutaneous ureterostomy was performed to drain a tuberculous pyelonephritis. Renal failure increased and he died a week later. At post-mortem there was inactive bilateral pulmonary tuberculosis, a right tuberculous pyelonephritis and bilateral tuberculous epididymitis.

Describe the specimen

The specimen consists of the sectioned testes to show the epididymis on each side distended by caseating tuberculous necrosis. There is no extension into the testis. The spermatic cords appear normal.

What is the diagnosis?

Tuberculous epididymitis

What is likely to be seen histologically in the affected area?

One will see necrotising granulomatous inflammation i.e. necrotic tissue with surrounding epithelioid macrophages, multinucleate giant cells and lymphocytes.

What other infections may affect the epididymis?

Neisseria gonorrhoeae and *Chlamydia trachomatis* can infect the epididymis. These are sexually transmitted and ascend via the vas deferens or local lymphatics. Gram-negative infections, associated with urinary tract infection, can also arise.