Scrotal Swellings

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Introduction

This tutorial has been designed to take you through some of the commoner conditions which can cause a swelling in the scrotum.

The most important thing to remember about a swelling arising from either the scrotum or its contents is that:

On examination it is possible to get above the swelling.

If you can’t get above the swelling then that suggests that the pathology has originated from the groin. So before we get started write down as many causes as you can think of for a swelling in the groin or scrotum which you cannot get above.

The answers are on the next slide.
Common Causes of a Lump in the Groin / Scrotum Which You Cannot Get Above
Common Causes of a Lump in the Groin / Scrotum Which You Cannot Get Above

Inguinal Hernia
Femoral Hernia
Enlarged Inguinal Lymph Nodes
Saphena Varix
Femoral Artery Aneurysm
Lipoma
Now let’s move on to scrotal swellings. Again, write down as many causes of a scrotal swelling which you can get above and then review the list on the next slide.
Common Causes of Scrotal Swellings Which You Can Get Above

Hydrocele
Epididymal Cyst
Varicocele
Epididymo-orchitis
Testicular Tumour
We are now going to go through each of the conditions on the list.

The tutorial will ask you a series of questions in each case and you can then review the answers on the slides which follow.
Hydrocele

1. Define a hydrocele
2. What is the underlying pathology?
3. How might you classify the causes?
4. What might a patient with a hydrocele complain of?
5. What are the important findings to elicit on examination?
6. Name 3 methods of treatment
Hydrocele 2

Definition:

“A hydrocele is a collection of fluid within the tunica vaginalis”

You should read up on the embryology of testicular descent to appreciate how the tunica vaginalis is formed
Hydrocele 2
Pathogenesis of Hydrocele

The fluid collects because of an imbalance between production and absorption.

The tunica vaginalis normally produces around 0.5ml of fluid a day.
Common Causes of Hydrocele

Congenital
- Patent processus vaginalis (PPV)

Acquired
- Idiopathic
- Tumour
- Trauma
- Infection

5 marks
Hydrocele History & Examination

History: A painless swelling in the scrotum. Onset may be gradual or sudden.

Examination: A scrotal swelling which you can get above. The testis cannot be palpated separate to the swelling. The lump transilluminates.
Hydrocele Investigation

Because one of the causes of a hydrocele is testicular tumour, it is important to arrange a scrotal ultrasound to rule out this as an underlying pathology.
Hydrocele Treatments Include:

- Conservative management if the hydrocele is small and causing little in the way of symptoms
- Aspiration +/- injection of a sclerosing agent
- Surgery: Ligation of PPV in children
  
  Jaboulay
  Lords

Both the Jaboulay and the Lords procedure involve incising the tunica vaginalis to allow the hydrocele fluid to be absorbed by the scrotal lymphatics. Read up the procedures in a surgical textbook to understand the techniques.
Epididymal Cyst

1. What is an epididymal cyst?
2. What might the patient complain of?
3. List three important findings on examination.
4. How are epididymal cysts treated?
Epididymal Cyst Definition

“A cystic swelling arising from the epididymis”
Epididymal Cyst History & Examination

History: Painless scrotal swelling
Onset usually gradual

Examination: Scrotal swelling which you can get above
Testis palpable separate from the lesion
The cyst transilluminates

The transilluminated appearance of the cyst is classically described as a “Chinese Lantern”
Epididymal Cyst Management

Simple surgical excision of the cyst

Aspirating will not work because the cyst is multiloculated

As for hydroceles, conservative management is perfectly reasonable if the patient is asymptomatic
Varicocoele

1. Define a varicocoele
2. What local symptoms might a patient complain of?
3. Describe the common signs on physical examination
4. Why is it important to image the kidneys?
5. Describe the two main methods of non-conservative management?
Varicocoele Definition

“A varicocoele is a dilatation of the veins of the pampiniform plexus”
Varicocoele Symptoms & Signs

Symptoms: Scrotal swelling
Far more common on left than on right
Dragging / aching sensation in the groin / scrotum

Signs: Scrotal swelling which you can get above
Swelling feels like a “Bag of worms”
Significance of Varicocele

A left sided-varicocele may arise as a result of obstruction to venous drainage caused by a renal tumour

Therefore all patients with a varicocele should undergo imaging (usually ultrasound) of their kidneys
Varicocoele: Methods of Treatment

The two main methods are:

1. Surgical ligation
2. Embolisation under X-Ray control
Epididymo-Orchitis

1. What is epididymo-orchitis?
2. List the symptoms and signs
3. How is the condition treated?
Definition of Epididymo-Orchitis

“An inflammation of the tissues of the epididymis and testis”

The commonest cause of this is infection. You need to know some of the commoner causative organisms.

Read up on these.
Symptoms & Signs

Symptoms: Painful scrotal swelling

Signs: A scrotal swelling which you can get above and which is
- hot
- tender
- erythematous
Treatment

An appropriate broad-spectrum antibiotic is used, such as ciprofloxacin.

Bonus Questions:
1. What class of antibiotic does ciprofloxacin belong to?
2. What is the mode of action of ciprofloxacin?
**Ciprofloxacin**

This is a fluoroquinolone antibiotic

It acts by inhibiting an enzyme called DNA gyrase in reproducing bacteria. This is one of the enzymes responsible for unwinding DNA during replication.
Testicular Tumours

Urology Scrotal Swelling Tutorial Part 2
Classification of Testicular Tumours

You might sensibly start classifying testicular tumours into benign and malignant. In fact benign solid tumours of the testis are extremely rare.

The classification of malignant tumours is complicated by the fact that there are different classification systems used in the UK and USA and consequently it’s easy to get confused if you read textbooks from the different countries.

So don’t read anything now. Go to the next few slides to see how these tumours are classified and how the systems work in the two countries.
It Starts Off Quite Easily

You can divide them into:

1. Germ Cell Tumours
2. Other tumours, the commonest of which is lymphoma, which is the commonest testicular malignancy in the older patient. We won’t be saying any more about these
Germ cell tumours can be divided into

1. Seminomas (we’ll talk about these in a bit)

2. Non-seminomatous germ cell tumours

The classification of these is where confusion sometimes arises. A summary is on the next slide.
But Remember

40% of testicular tumours are mixed, i.e. they have both seminomatous and non-seminomatous elements
Questions

1. What is the peak age incidence of seminomas?
2. What is the peak age incidence of non-seminomatous germ cell tumours (NSGCTs)?
3. What are the symptoms & signs of a testicular tumour?
4. What investigations are required?
5. What surgery is usually necessary?
6. What other therapeutic options exist for seminomas & NSGCTs?
Peak Age Incidence

Seminomas  40 years
NSGCTs      30 years
Symptoms & Signs

Symptoms:  Painless scrotal swelling
           Chance discovery
           Testis feels “heavier”

Signs:  Scrotal swelling which you can get above
         The lump is craggy & does not transilluminate
         May be associated with hydrocele
         May have palpable liver due to metastases
Investigations

Radiology:  Ultrasound of testis
            CT of abdomen to assess spread
            Chest X Ray for metastases

Blood Tests:  AFP  (alpha foeto-protein)
             β–hCG (human chorionic gonadotrophin)
             LDH  (lactate dehydrogenase)
Surgery

An inguinal orchidectomy is performed

i.e. the testis is taken out through an incision in the groin

This is because the lymphatic drainage of the testis is to the para-aortic nodes. An incision in the scrotum risks spreading the tumour to the superficial inguinal lymph nodes which drain the scrotal skin.
Other Treatments

If the tumour has metastasised, other options for treatment include:

Radiotherapy for seminoma
Chemotherapy for NSGCTs

Sometimes a combination of the two is required