

My assignment 2

Name: Adesina Benita tomisin

Department: human anatomy

Course: ana 212- pelvis and perineum

College: medicine and health sciences

Matric number : 18/mhs03/001

Level : 200

Questions

Discuss the anal canal

Answers

The anal Canal

The anal canal is the terminal part of the alimentary canal, it begins at the ano-rectal junction and opens exteriorly at the anal orifice , it is directed downwards . The anterior wall of the anal canal is shorter than that of the posterior wall

There is muscle located in the anal canal, called the **sphincter ani muscle** which surrounds the anal canal, keeping it closed until period of defecation.

An average length of the anal canal is 3.8cm.

Relations of anal canal

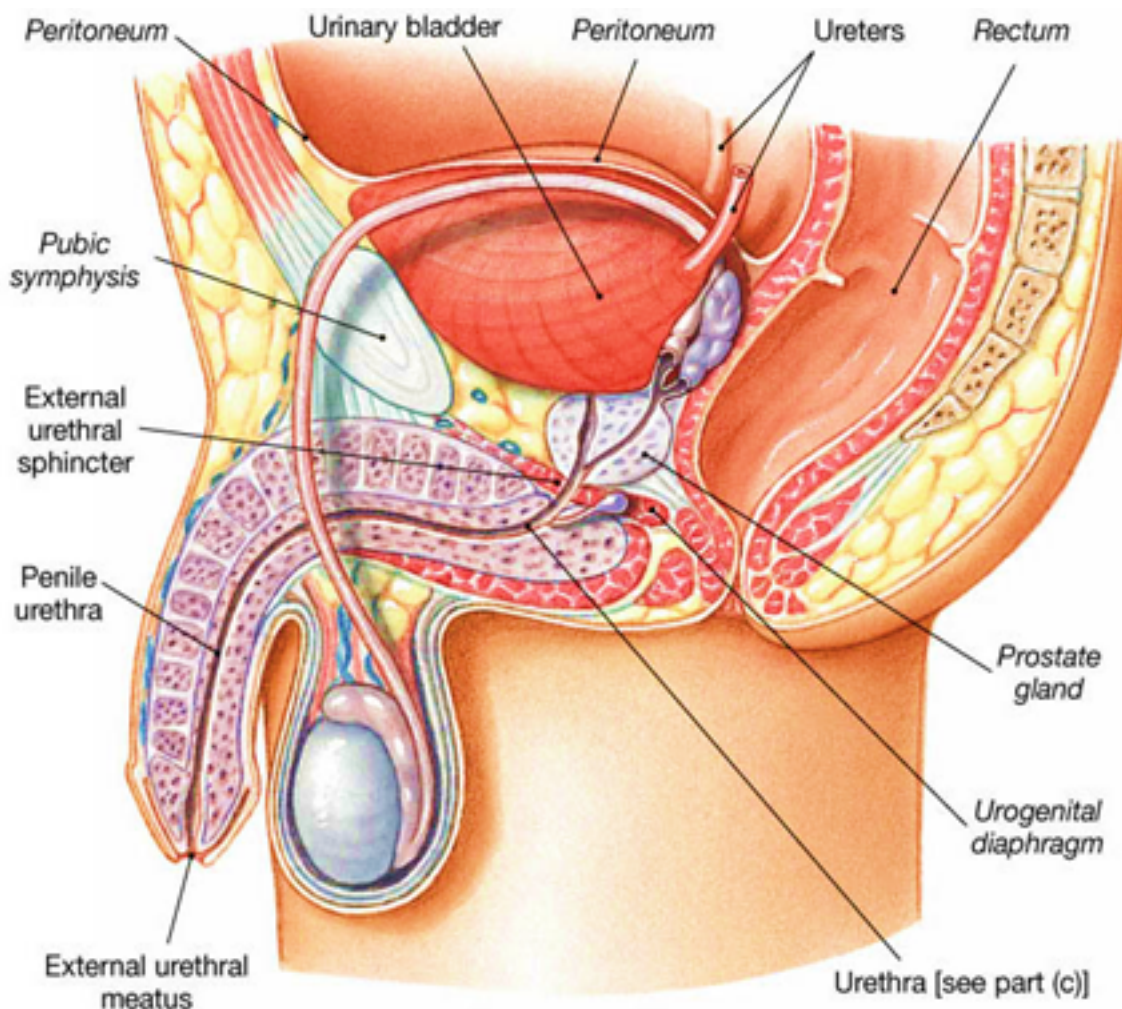
Anteriorly: perineal body, bulb of penis, spongy urethra and vagina(in females)

Posteriorly: ano-coccygeal raphe and fibro-fatty tissue.

Laterally: ischio-rectal fossa and its contents

Lines of the anal canal

In the anal canal there are two major lines, these lines helps to demarcate the lower part of the anal canal from the higher part of at the anal canal.



(a) Male pelvis, sagittal section

1. The pectinate line

This is a mucocutaneous junction of the anal canal, it also corresponds with the anal valve. The function of the pectinate line, is to divide the anal canal into the lower and upper areas which are different in development, blood supply, lymphatic drainage and nerve supply. The area above the pectinate line is developed from endodermal cloaca and the area below is developed from endodermal proctodeum.

2. The Hilton's line / white line

The white line is represented by the anal interphincteric groove at the lower end of the internal sphincter muscle.

The interior of the anal canal

The interior of the anal canal is divided into 3 parts;

1. The upper part
2. The middle part
3. The lower part.

The upper part

The upper part of the anal canal, also known as the mucous .] it is lined by a mucous membrane. It is about 15mm long.

The upper part is also subdivided into 5 parts

- a. Anal columns(column of morgangning)
- b. Anal valves
- c. Anal papillae
- d. Anal sinuses
- e. Anal glands.

The middle part

The middle part is the pecten transitional zone, this is where the mucous area is changing into the cutaneous area

The lower part

The lower part is also know as the anal verge cutaneous. This area is cutaneous and is also called the **anal valve**.

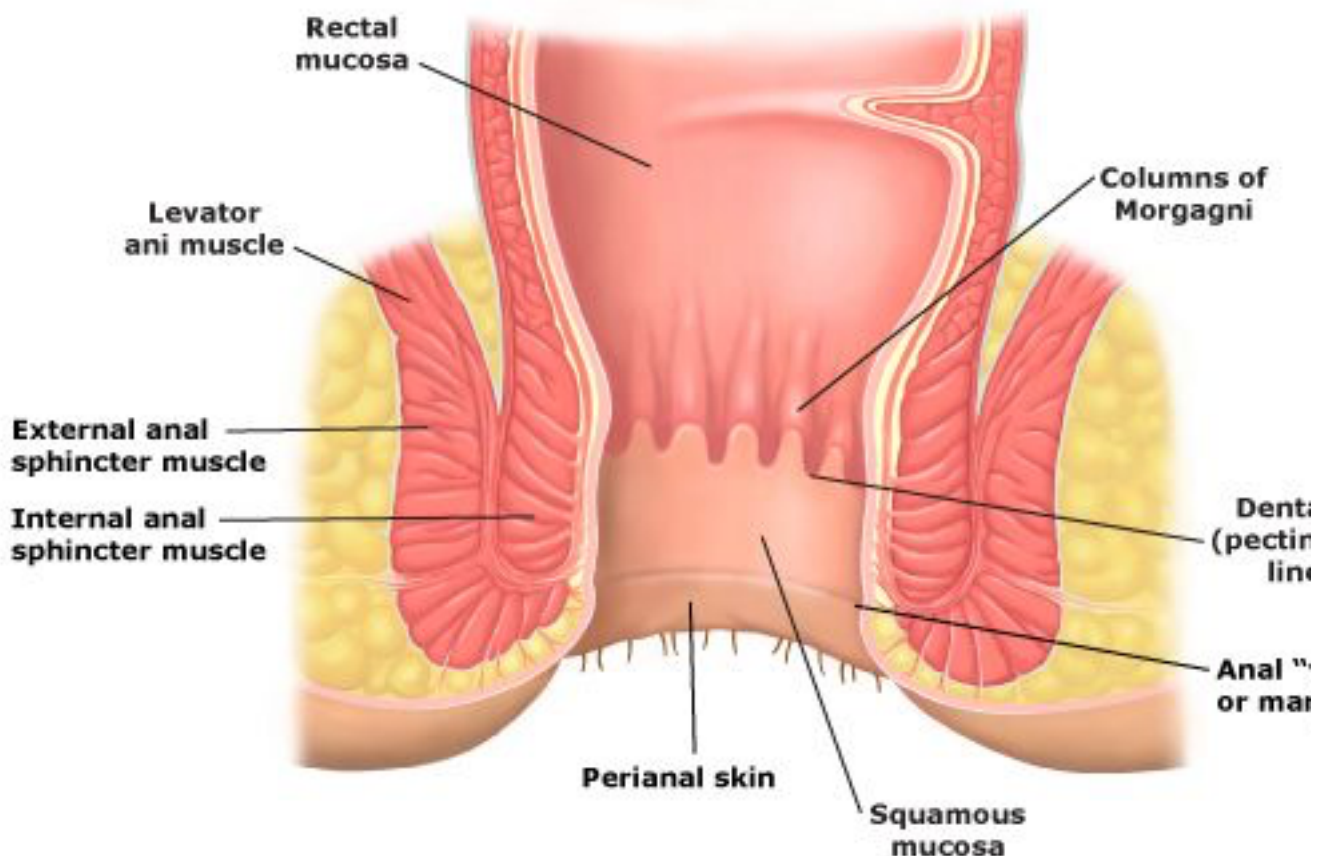
sphincters of the anal canal

We have 2 divisions of sphincters

1. Sphincter ani internus(internal anal sphincter)
2. Sphincter ani externus (external anal sphincter)

1. the layers of Internal anal sphincter

- a. Outer longitudinal muscle - they continue down as fibroelastic septa .
- b. Inner circular muscle - this muscle will continue into the internal anal sphinter, it is a smooth muscle.



2. The layers of the external anal sphincter

This division has 3 parts

- a. Deep part
- b. Superficial part
- c. Subcutaneous part.

The arterial supply of the anal canal

The area above the pectinate line is supplied by superior rectal artery and the lower area below the pectinate line is supplied by inferior rectal artery.

The venous drainage of the anal canal

The area above the pectinate line is drained into the portal system via superior rectal vein and the area below the pectinate line is drained by the systemic vein via inferior rectal veins.

The nerve supply of the anal canal

The area above the pectinate line which is lined by simple columnar epithelium, is supplied by autonomic nerves, the sympathetics are from superior hypogastric plexus L1, L2 and parasympathetics from pelvic splanchnic nerves S2,3&4. These areas are insensitive to pain only stretch.

The area below the pectinate line which is lined by stratified squamous epithelium, is supplied by somatic spinal nerves via inferior rectal nerves. These parts are sensitive to pain, touch and temperature.

The Lymphatic drainage of the anal canal

The area above the pectinate line is draining into the internal iliac nodes, left common iliac nodes, and para-rectal nodes.

The area the below the pectinate line is draining into the horizontal set of superficial inguinal lymph nodes.

Applied anatomy of the anal canal

1. Haemorrhoids (piles)
2. Anal fissure
3. Fistula in anal
4. Rectal incompetence
5. Imperforate anus.

Reference

www.youtube.com

www.slideshare.net

www.anatomynote.com