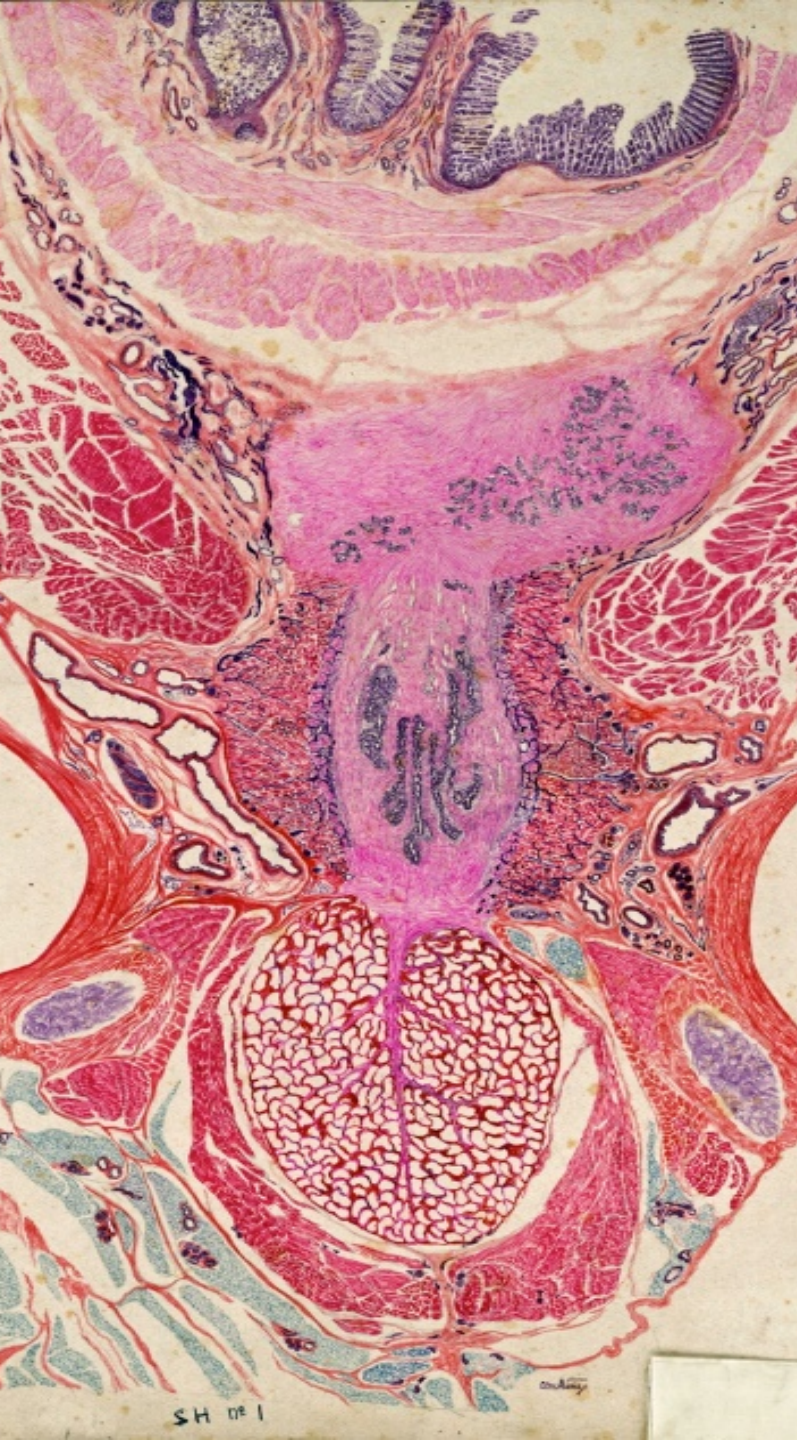




Surgical Anatomy of the Male External Urethral Sphincter

José María Gil-Vernet Sedó

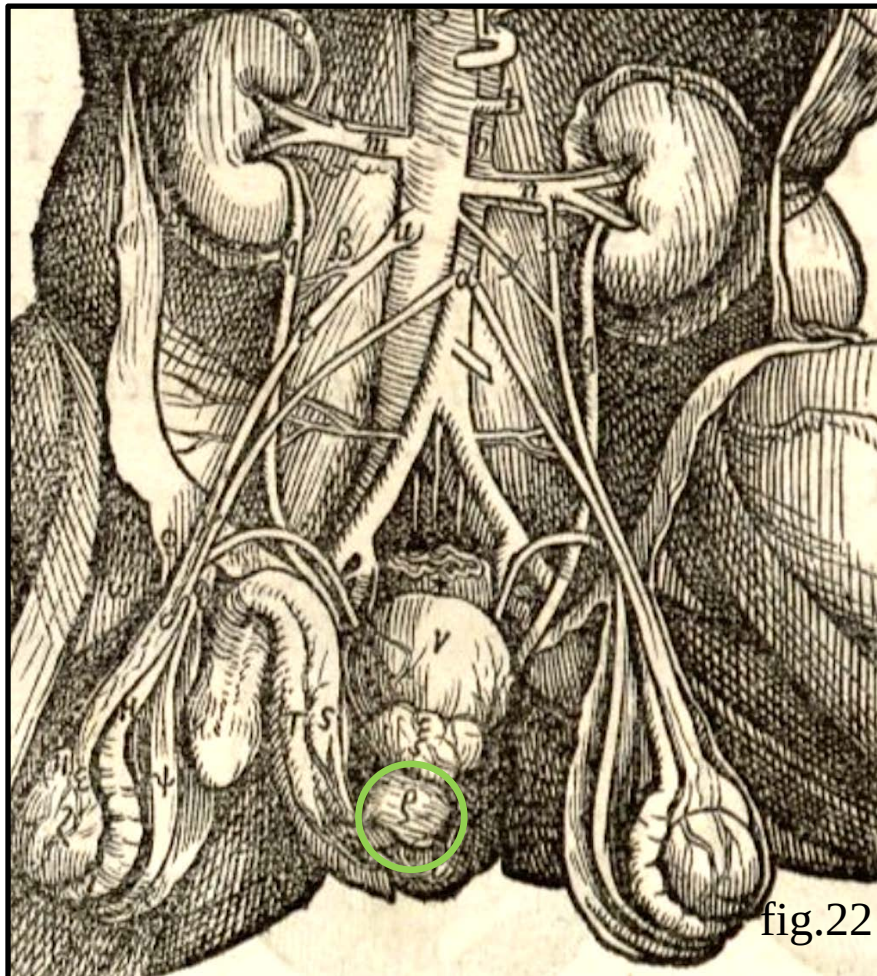
Centro Médico Teknon — Barcelona

1ο Πανελλήνιο Συνέδριο Κλινικής Ανατομίας
Πάτρα, Ελλάδα · 2–4 Οκτωβρίου 2026

History

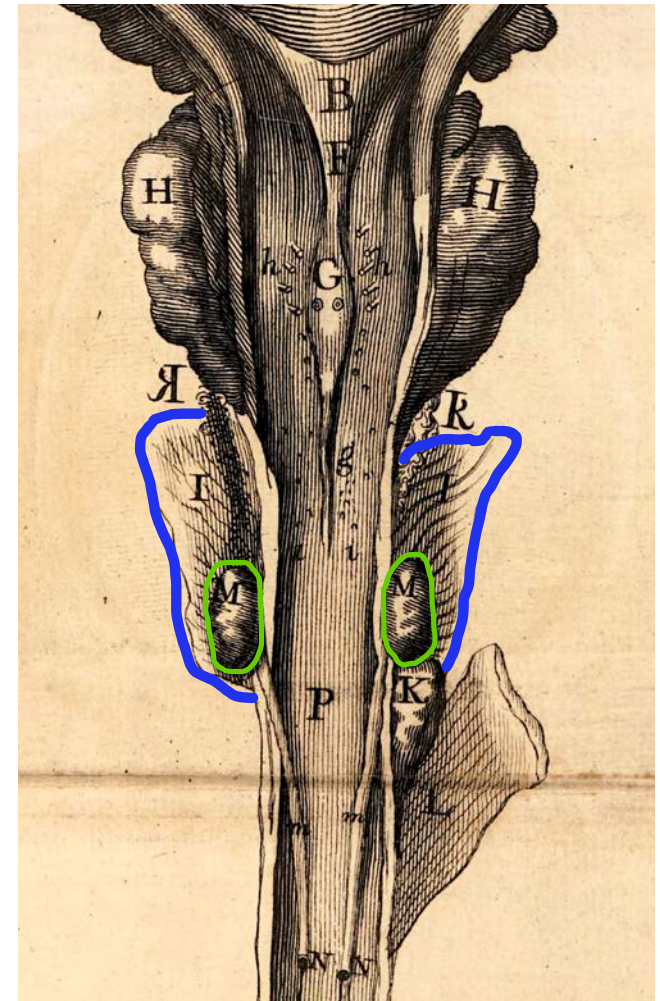
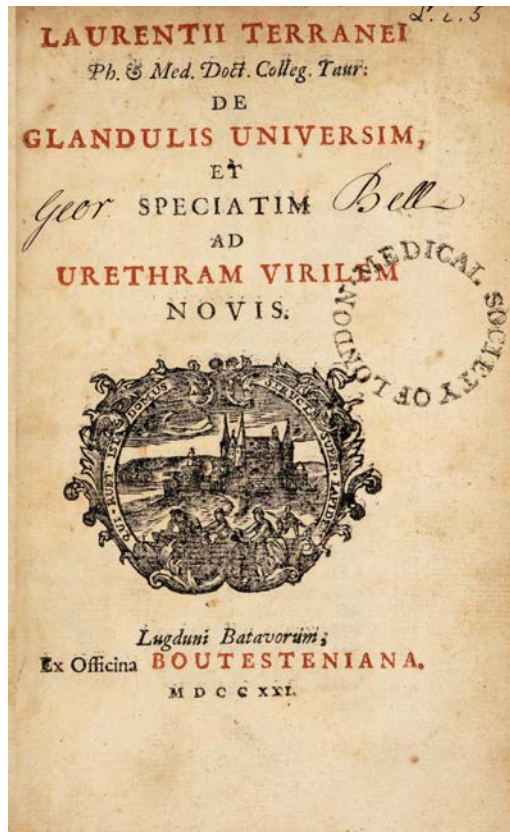
Galen (130-201) *Περὶ χρείας μορίων*. Book V (ca. 169)

A. Vesalius (1514-1564) *De humani corporis fabrica*.. Book V (1543).



Lorenzo Terraneo (1666-1714)

Glandulis universum et speciatim ad urethram virile novis (1729). Tab II.

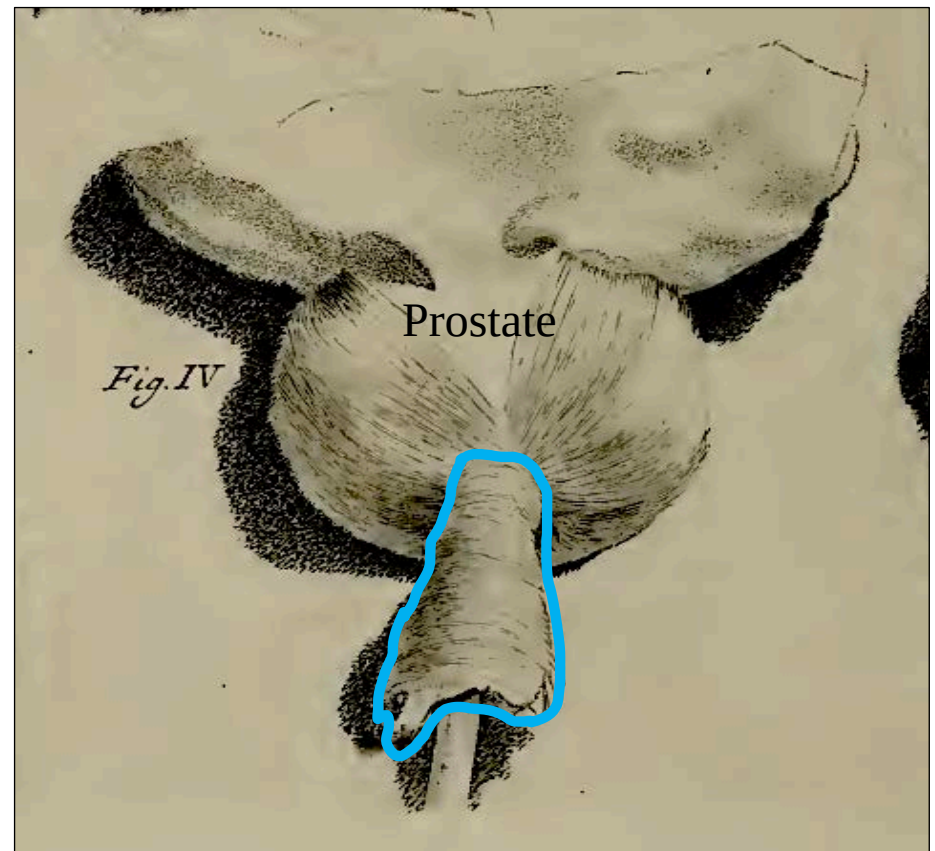
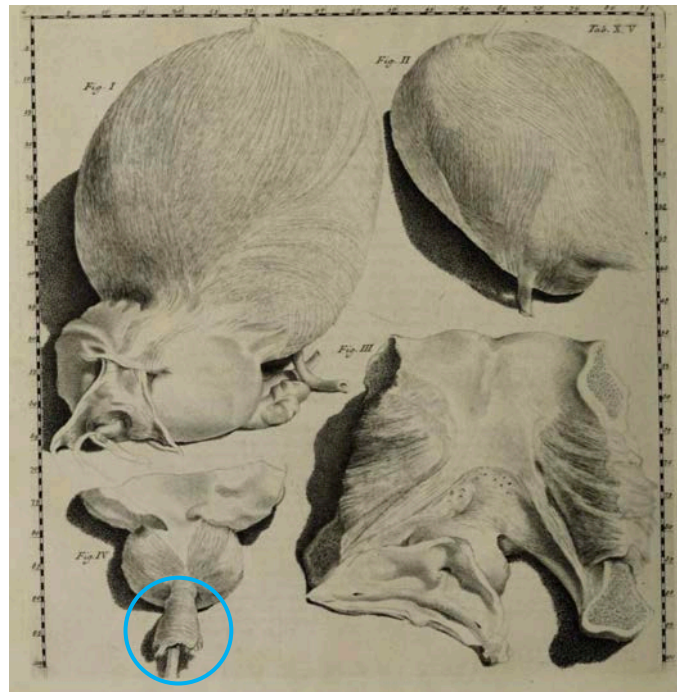
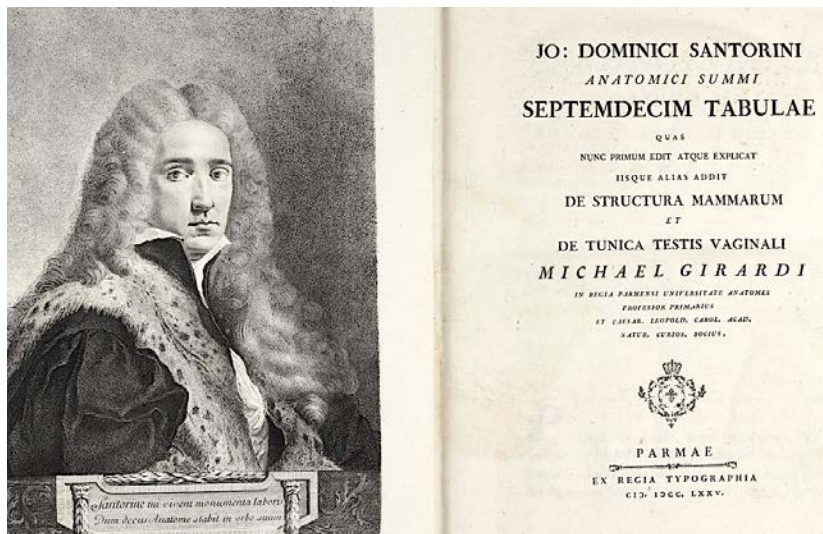


External Urethral Sph. ●

Bulbourethral gland ●

History

G. Domenico Santorini (1681-1737)
Anatomici summi Septemdecim Tabulae...
(1775) Tab. XV.

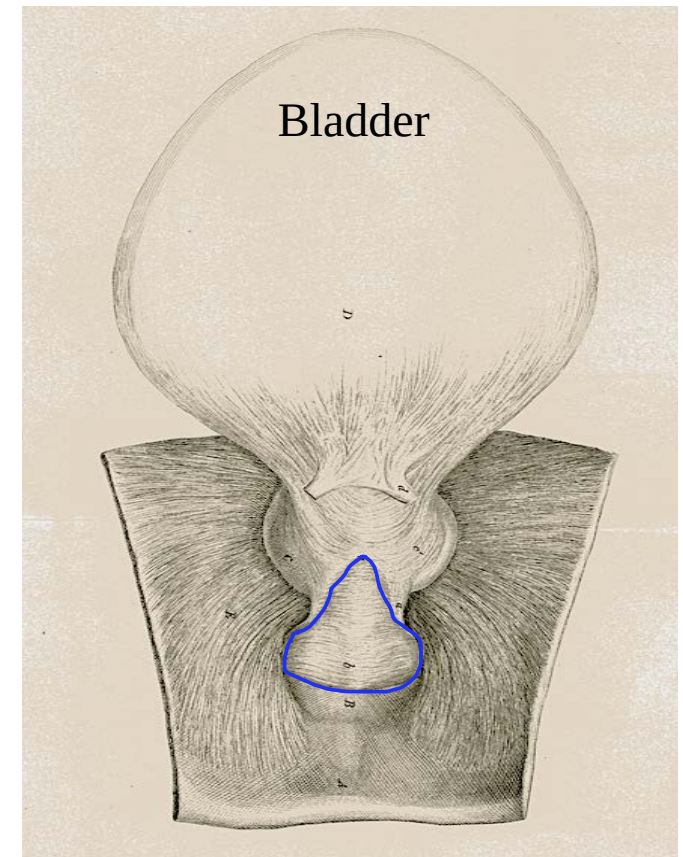
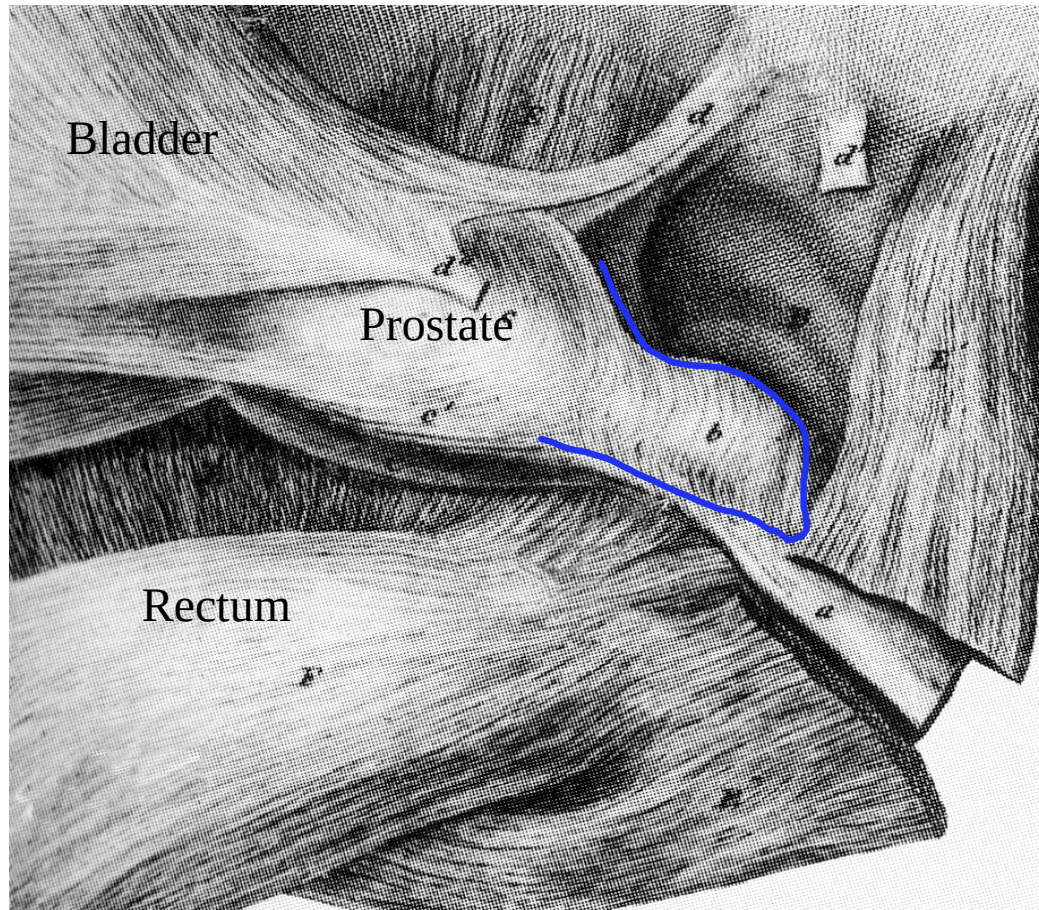


History



Johannes Peter Müller (1801-1858)
Über die organischen Nerven...(1836)

*Musculus constrictor
uretrae membranacea*

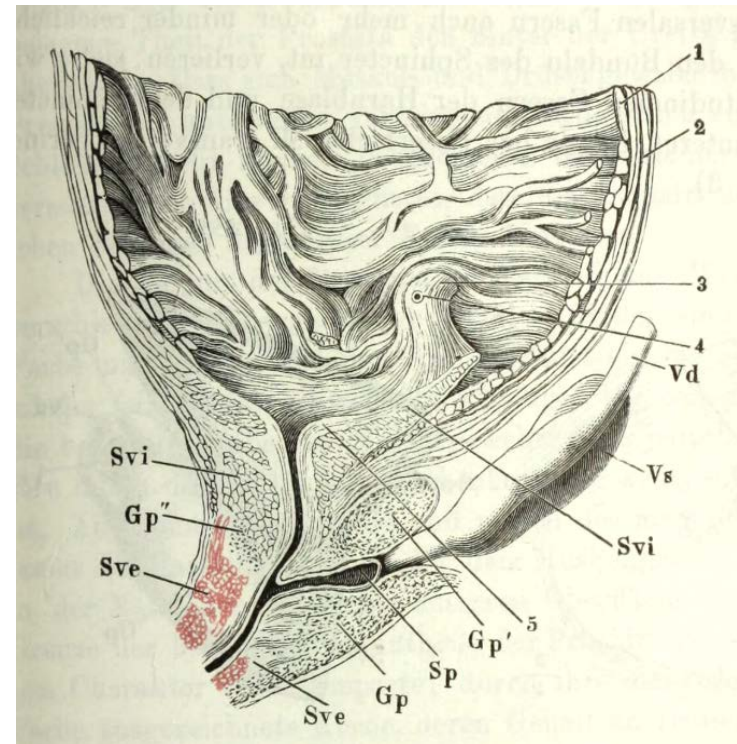
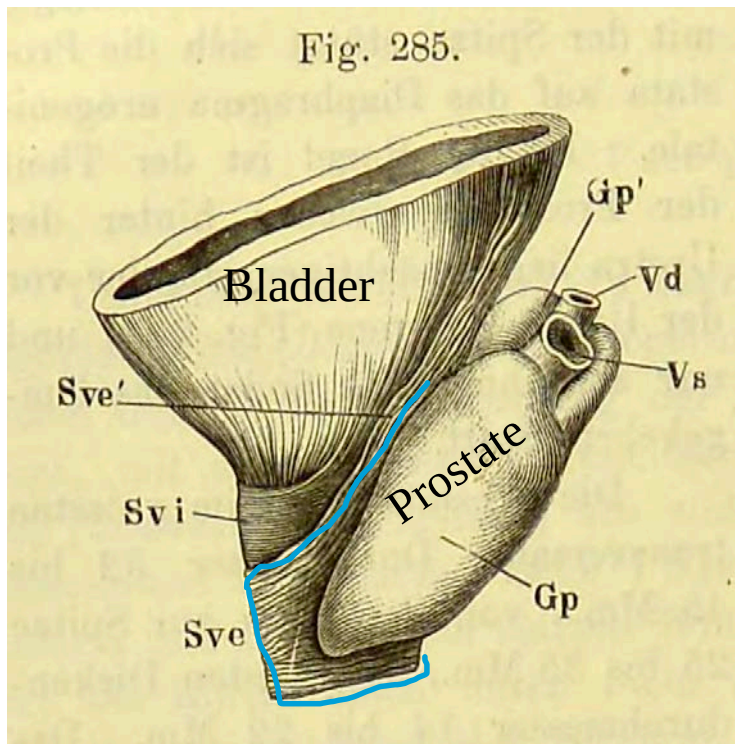




Friedrich Gustav Jacob Henle (1809-1885)

Handbuch der systematischen Anatomie des Menschen. Vol. 2 (1866)

Sphincter vesicae externus

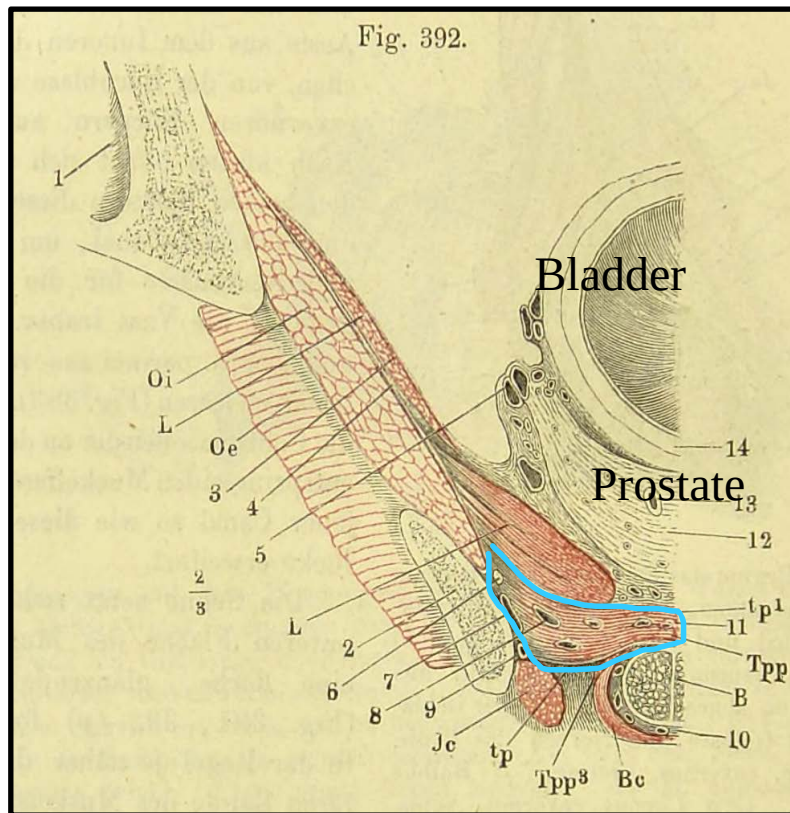




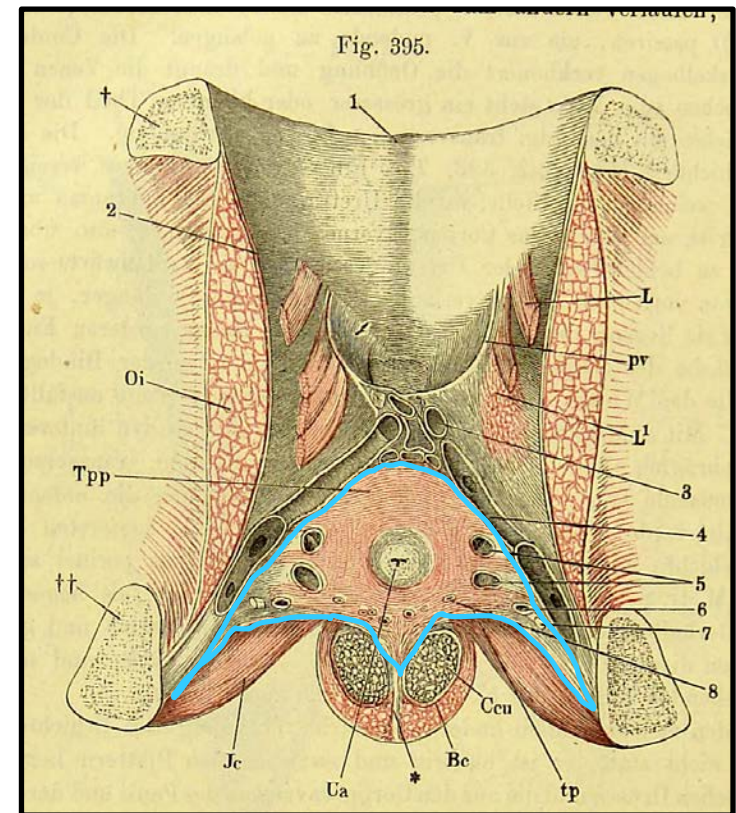
Friedrich Gustav Jacob Henle (1809-1885)

Handbuch der systematischen Anatomie des Menschen. Vol. 2 (1866)

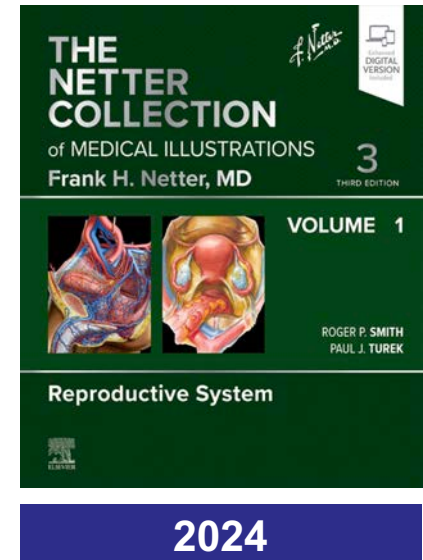
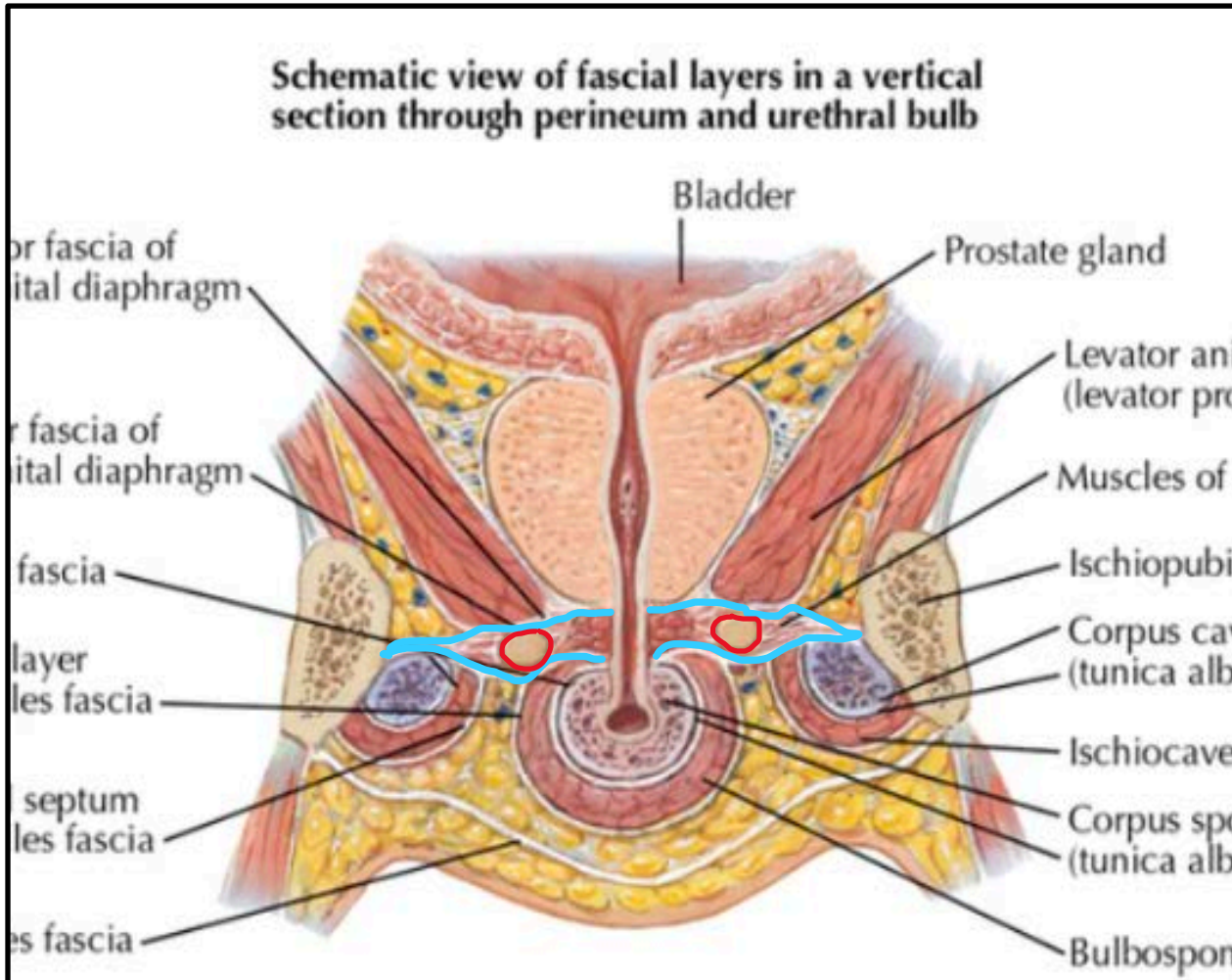
Diaphragma urogenitale



M. transversus profundus



The Urogenital Diaphragm Myth (1954-1989)



Urogenital diaphragm



Bulbourethral gland

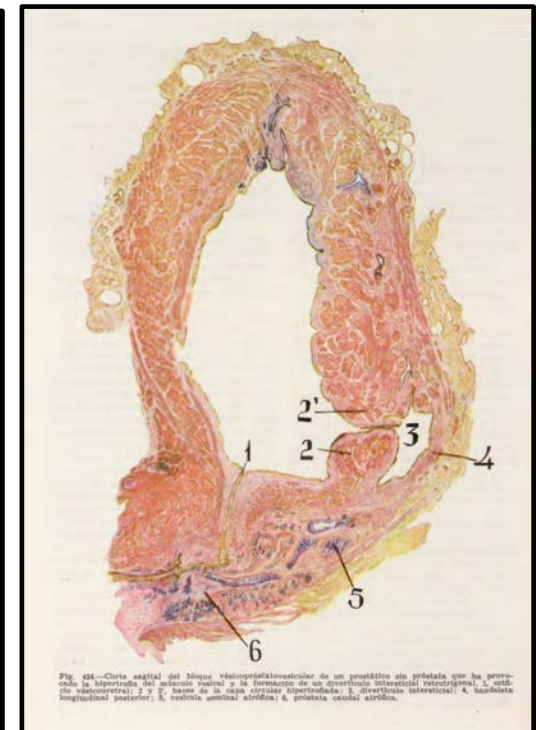
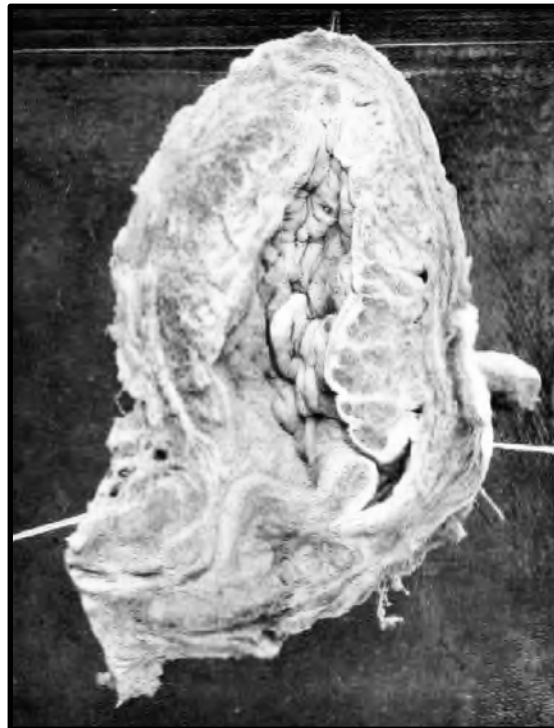
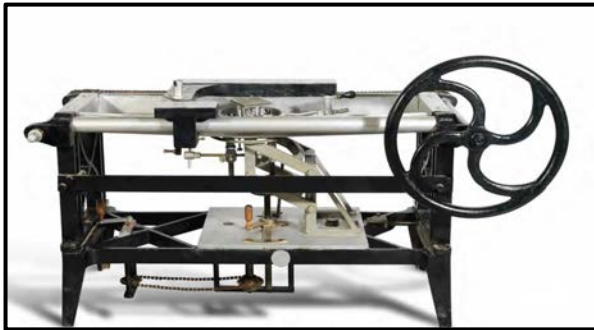


History

Salvador Gil Vernet (1892-1987)

Anatomist and Urologist

Topographic and microscopic anatomy of the male pelvis and perineum (1930-1968).

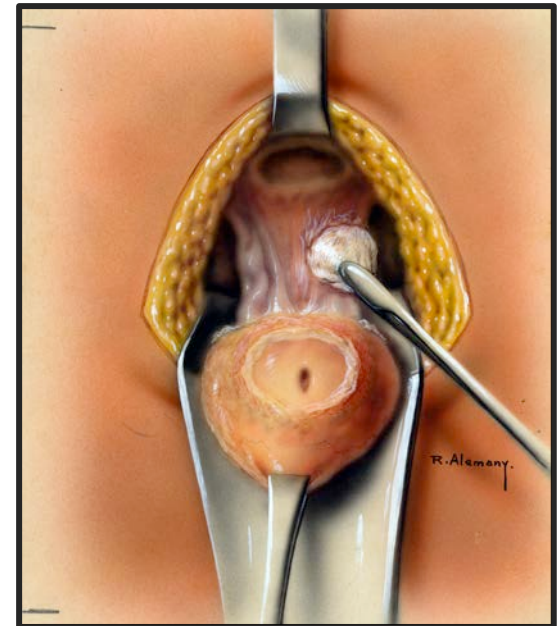
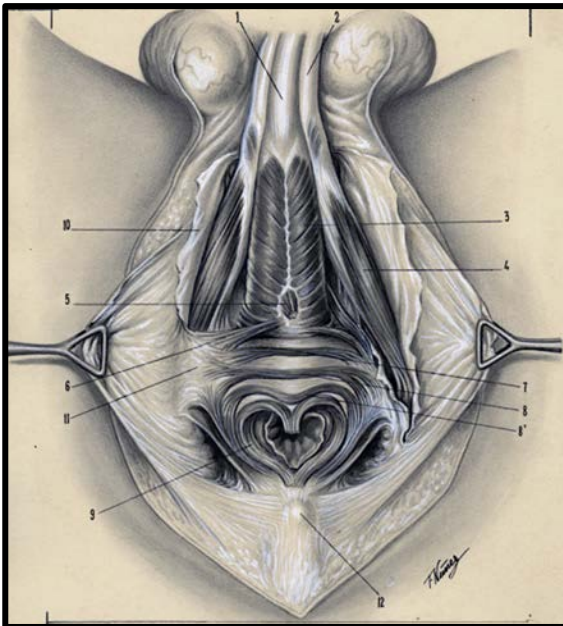




Salvador Gil Vernet (1892-1987)

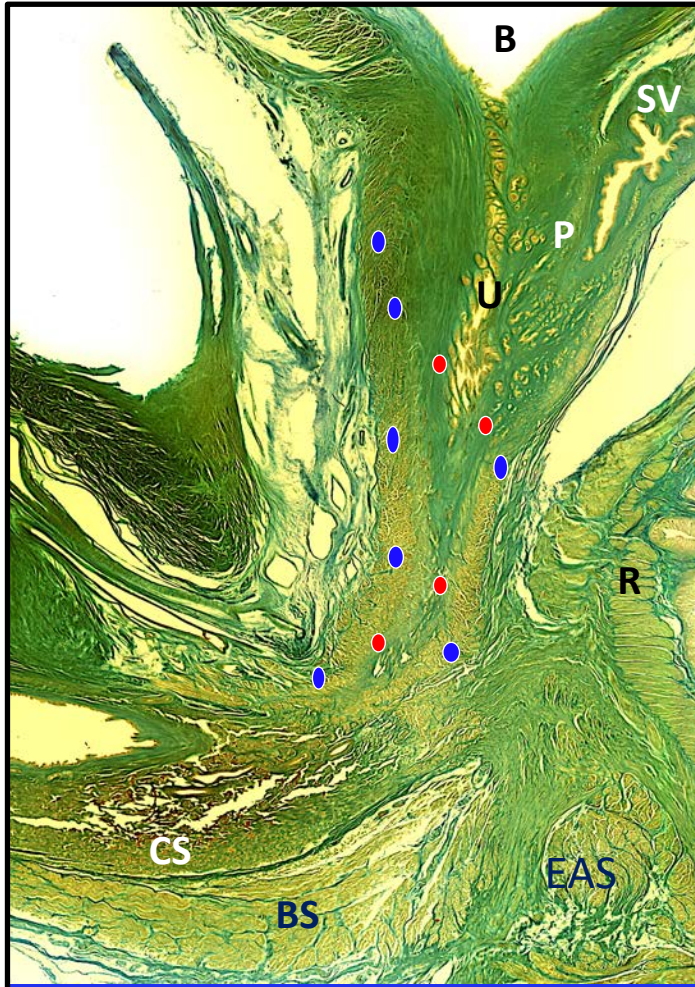
Patología Urogenital (1944-1955).
3 Volumes

*Morphology and Function
of Vesico-Prostato-Urethral
Musculature* (1968)

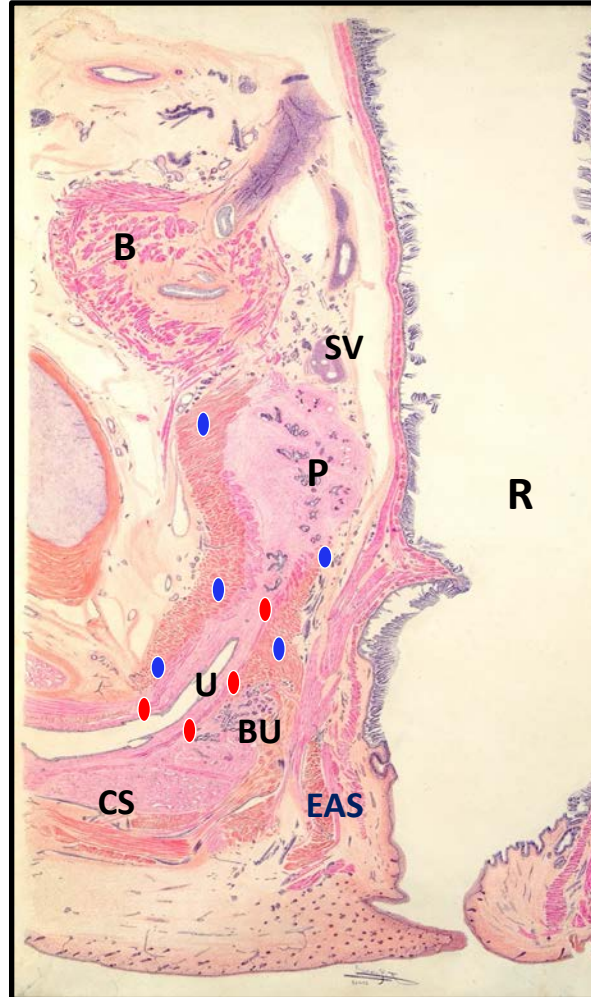


External Urethral Sphincter

Development and maturation (T. Oelrich, 1980) 1980)



190-mm-CR male foetus



200-mm-CR male foetus

Rhabdosphincter ●

Lissosphincter ●

U Urethra

B Bladder

P Prostate

BU Bulbourethral gland

SV Seminal vesicle

R Rectum

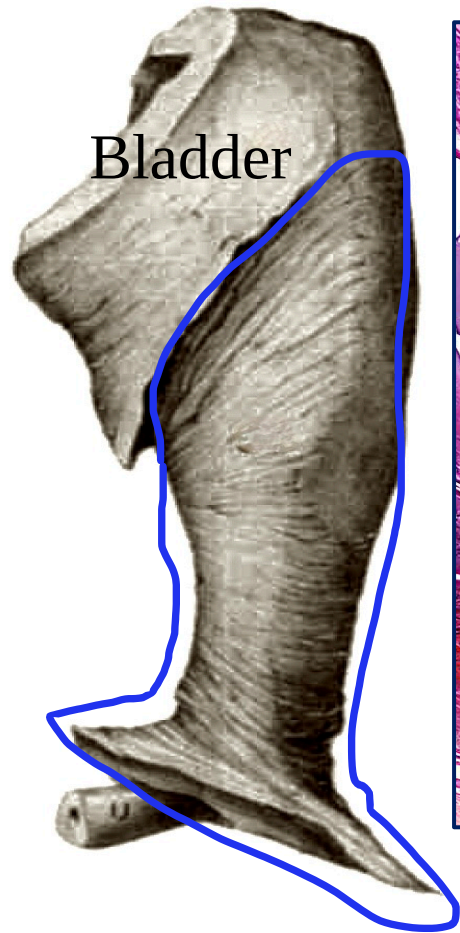
EAS Ext. anal sphincter

BS M.bulbospongiosum

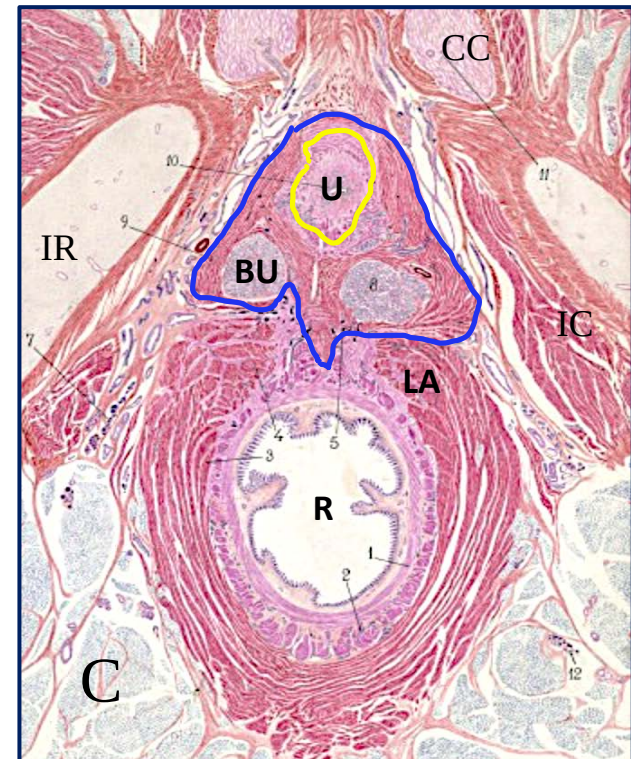
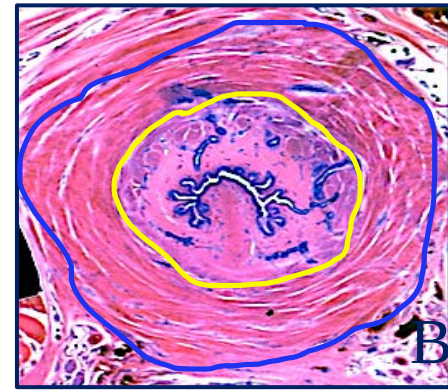
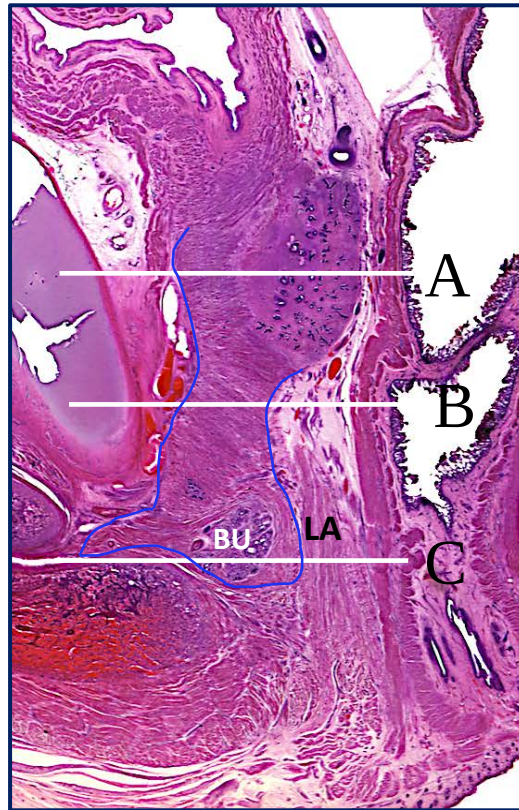
CS Corpus spongiosum

External Urethral Sphincter

Microscopic Anatomy (Gil Vernet, 1944)



Bladder



U Urethra

BU Bulbourethral gland

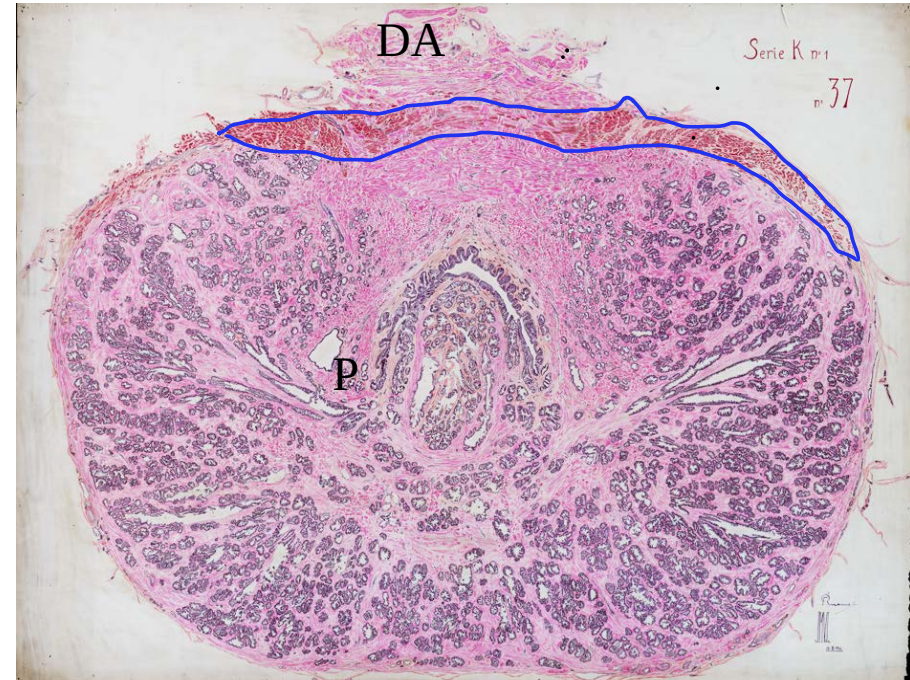
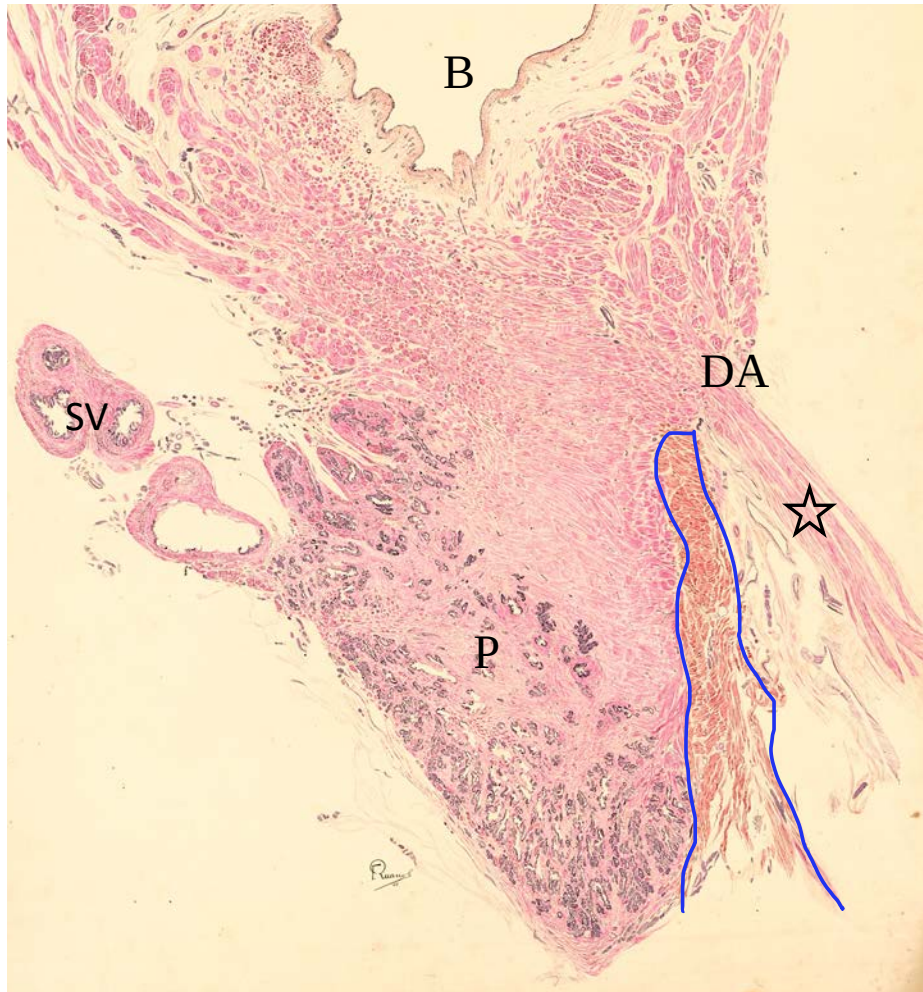
LA Levator anii

Rhabdosphincter ●

Lissosphincter ●

External Urethral Sphincter

Cranial segment



EUS ●

B Bladder

P Prostate

DA Detrusor apron

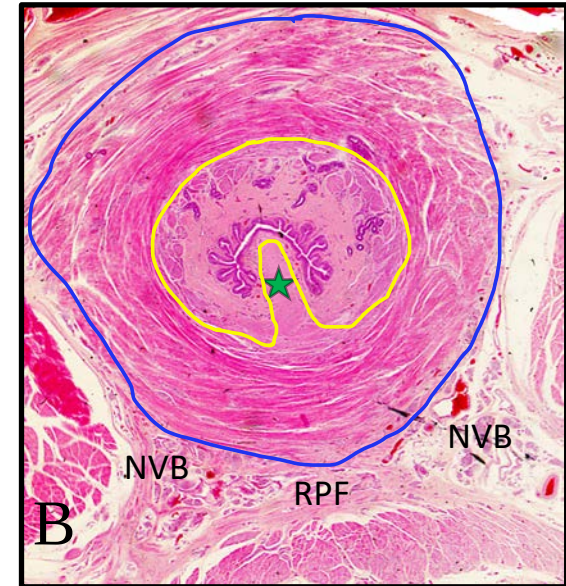
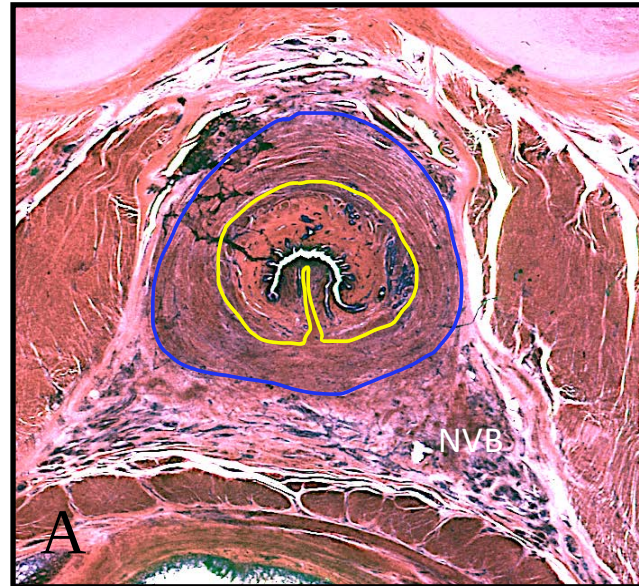
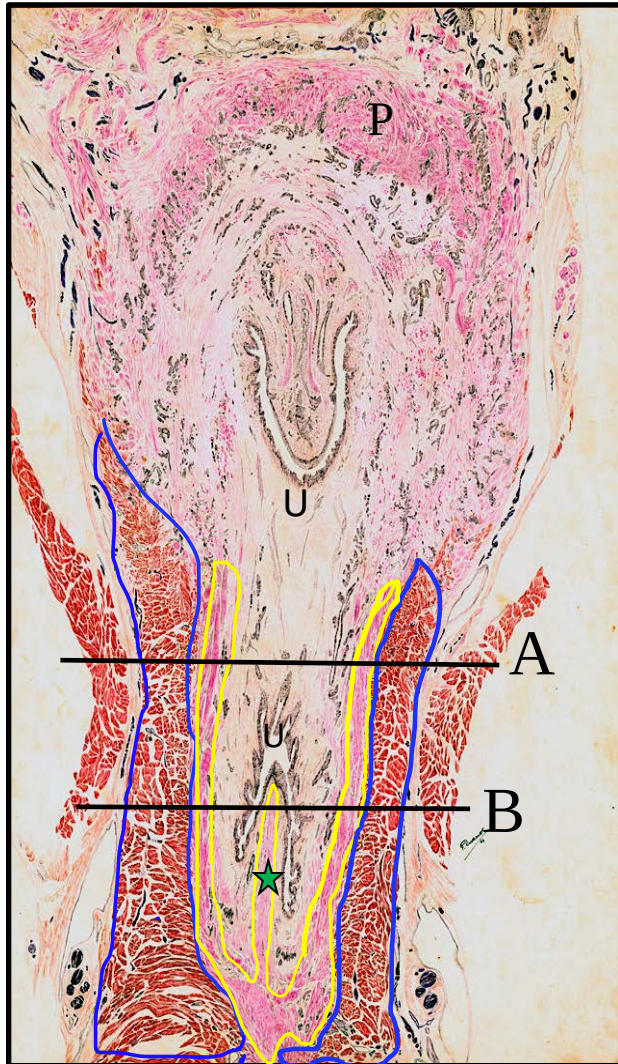
Pubovesical muscle

SV Seminal vesicle



External Urethral Sphincter

Middle segment



Rhabdosphincter ●

Lissosphincter ●

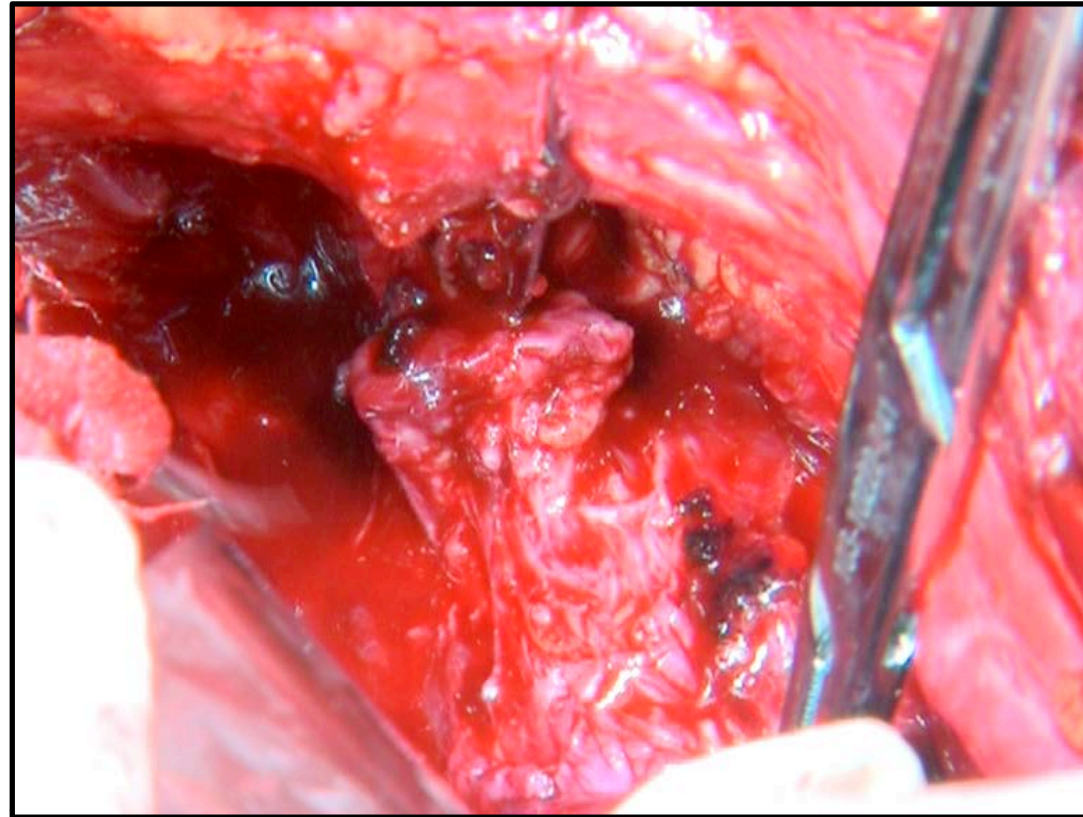
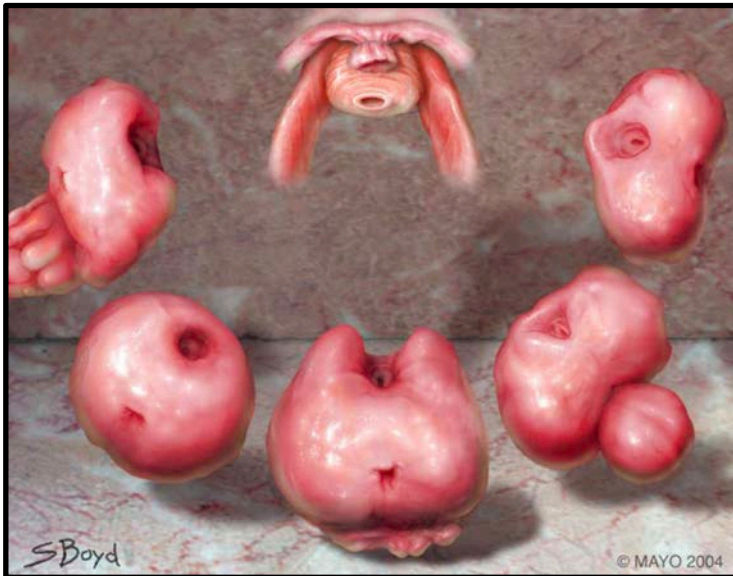
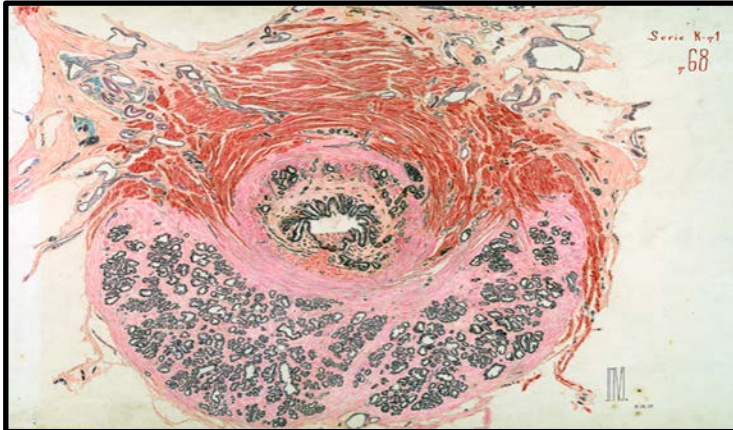
Posterior prostate-urethral bundle ★
(Gil Vernet, 1953)

U Urethra

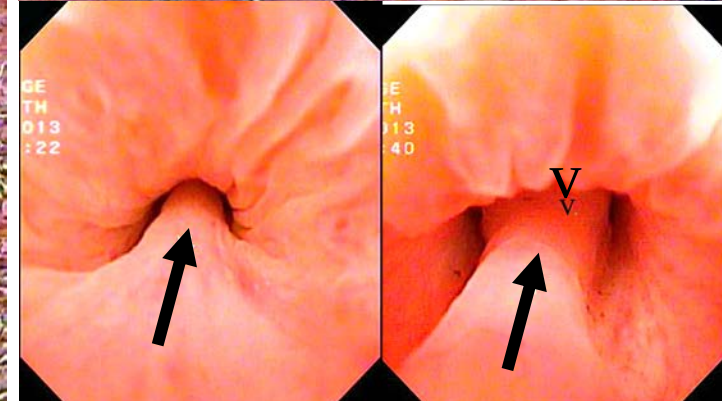
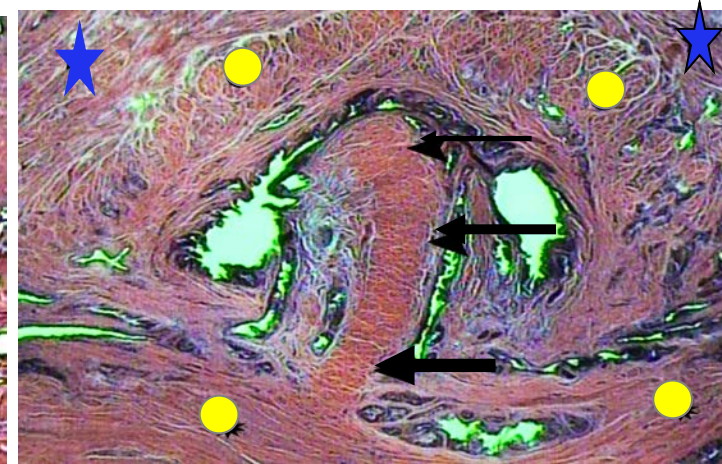
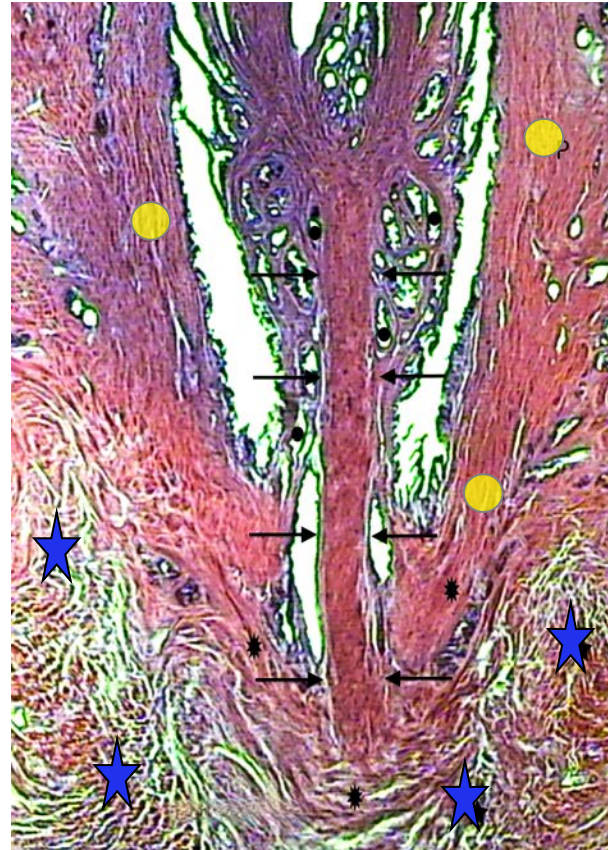
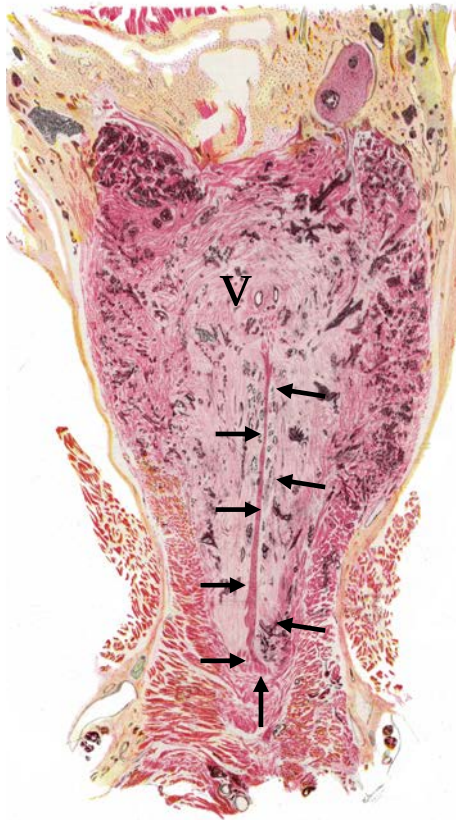
NVB Prostate neurovascular bundle

RPF Rectoprostatic fascia

Dissection of the prostatic apex



Middle segment. *Crista urethralis*



Rhabdosphincter ★

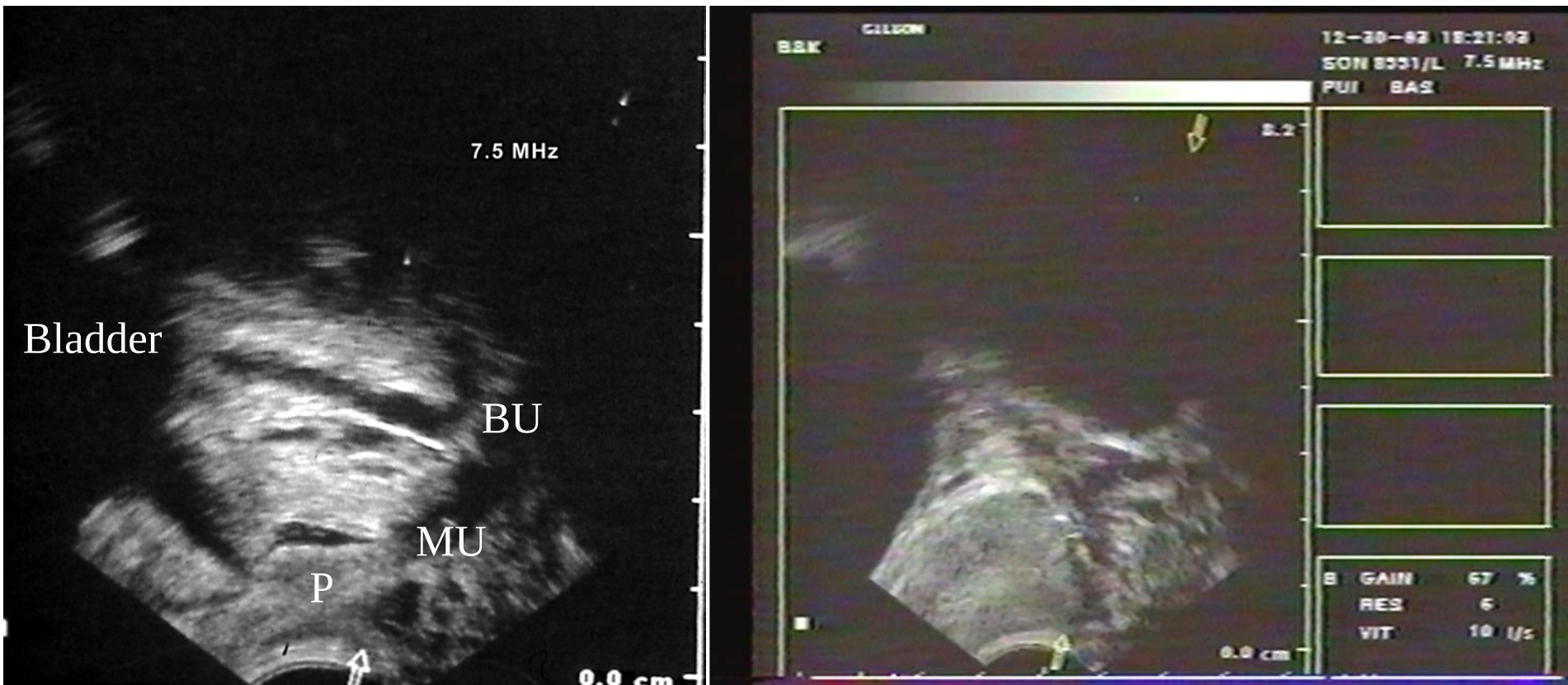
Lissosphincter ●

Posterior prostatourethral muscular longitudinal bundle →

Colliculus seminalis V

External Urethral Sphincter

Seminal expulsion and the Musculus ejaculatorius

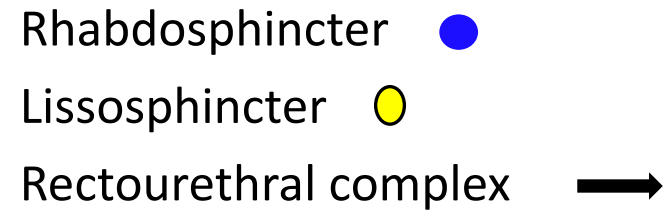


BU Bulbar urethra

MU Membranous urethra

P Prostate

Caudal segment



RPF Rectoprostatic fascia

RL Rectal longitudinal layer

BU Bulbourethral gland

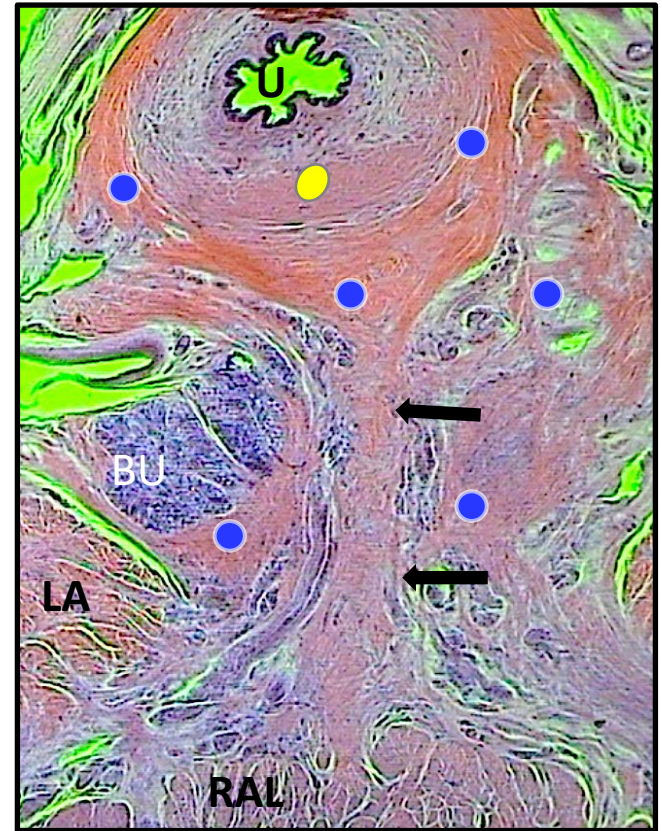
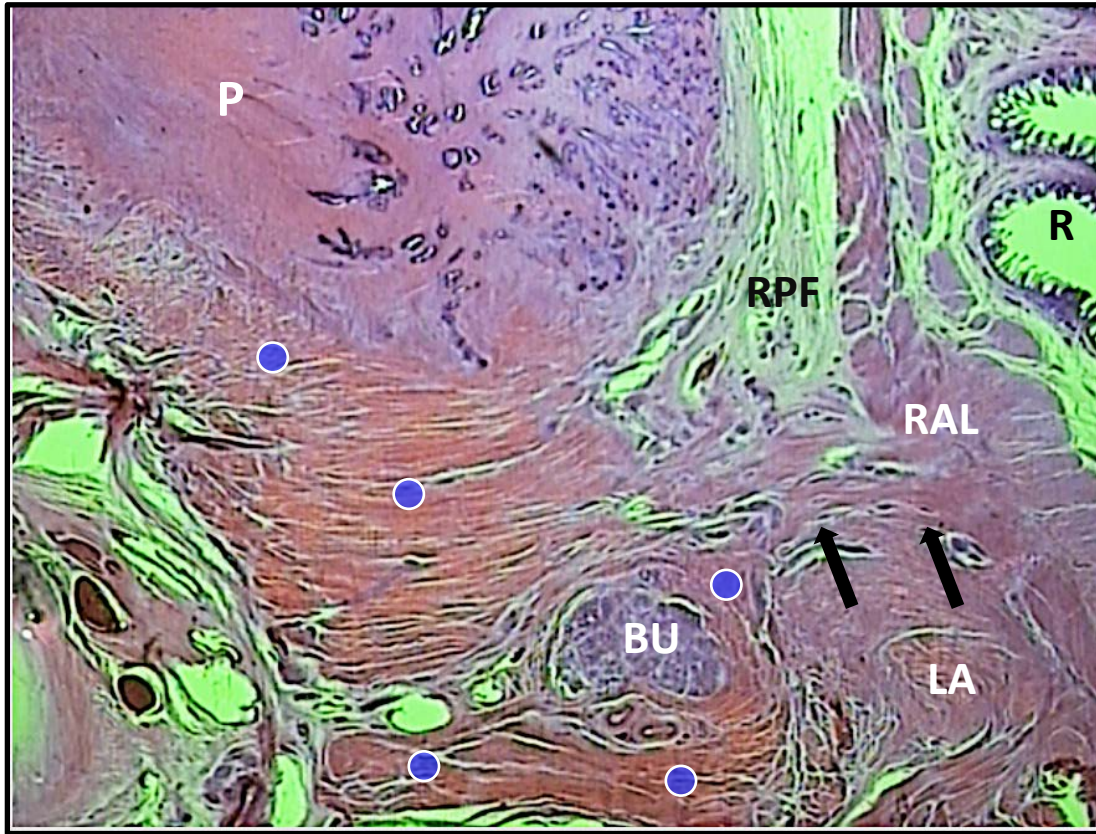
CS Corpus spongiosum

BS M. bulbospongiosus

EA External anal sphincter

CC Corpus cavernosum

Caudal segment



Rhabdosphincter ●

Lissosphincter ●

Rectourethral complex →

U Urethra

P Prostate

RAL Rectal anterior muscular layer

RPF Rectoprostatic fascia

LA Levator ani

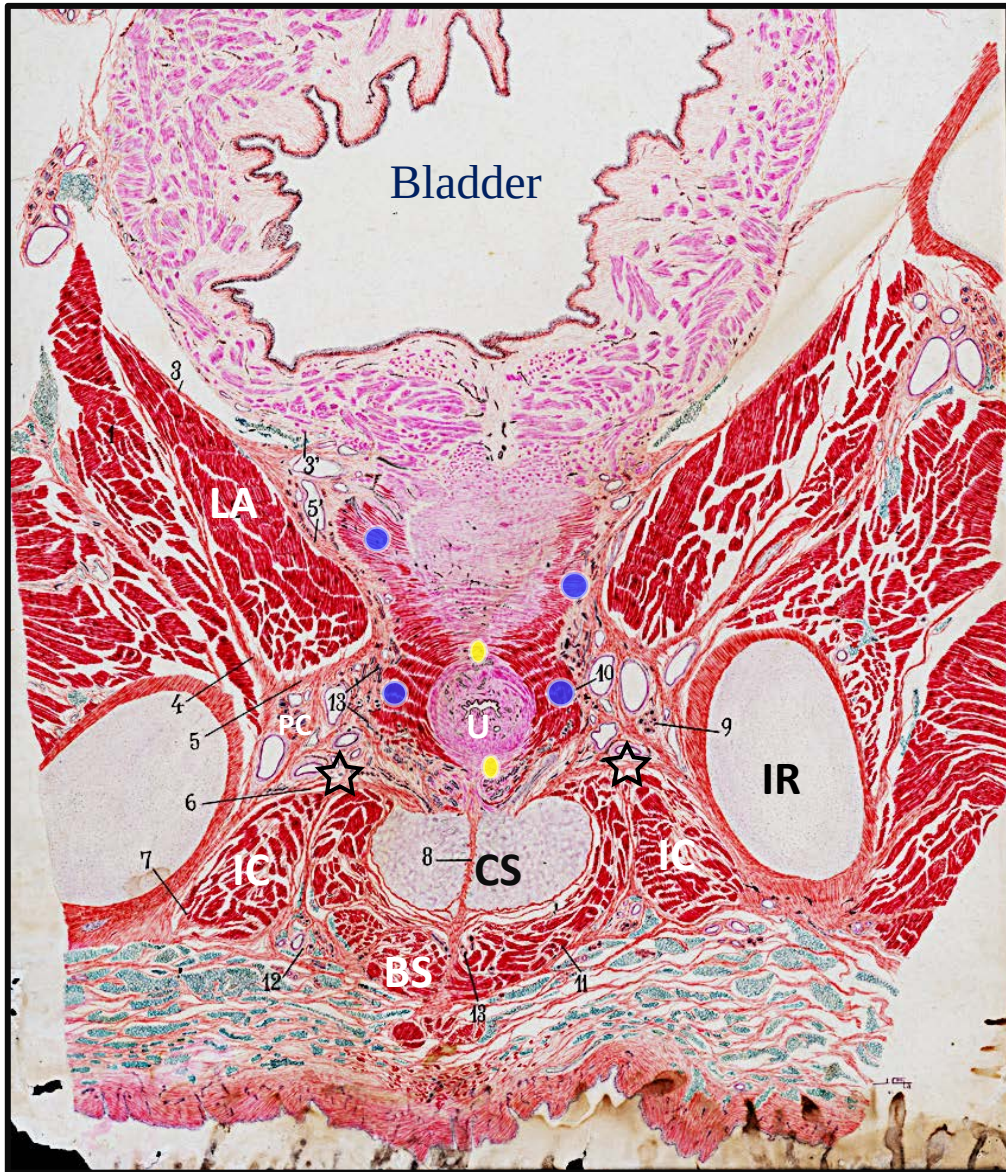
BU Bulbourethral gland

Caudal segment

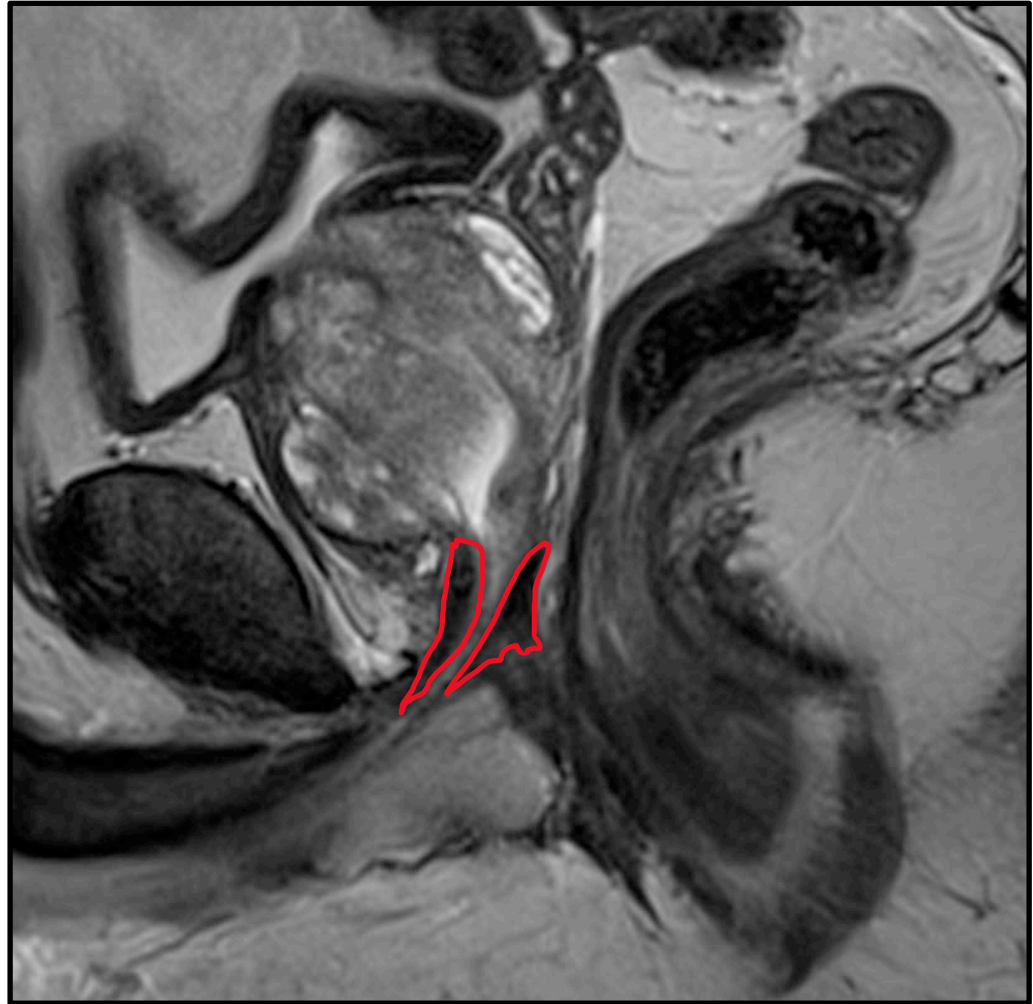
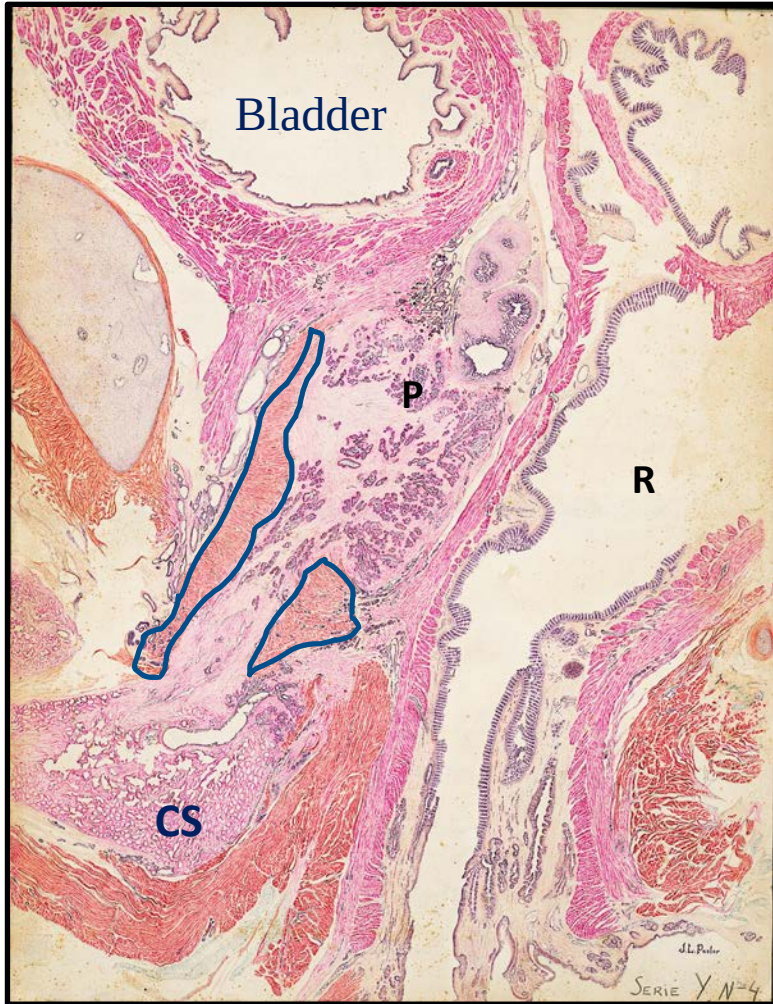
External Urethral Sphincter

Rhabdosphincter ●
Lissosphincter ●
Perineal membrane ☆

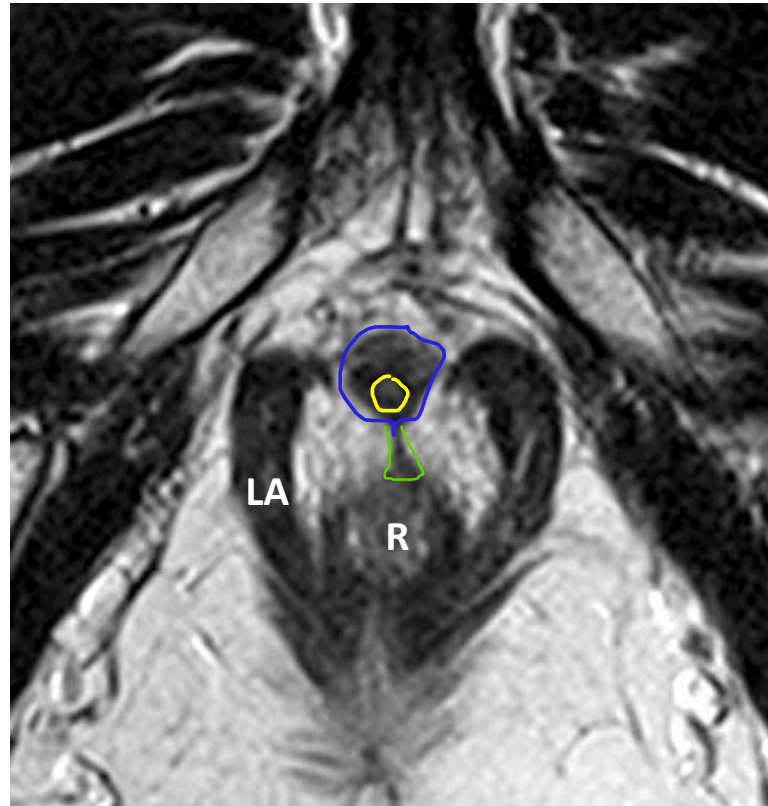
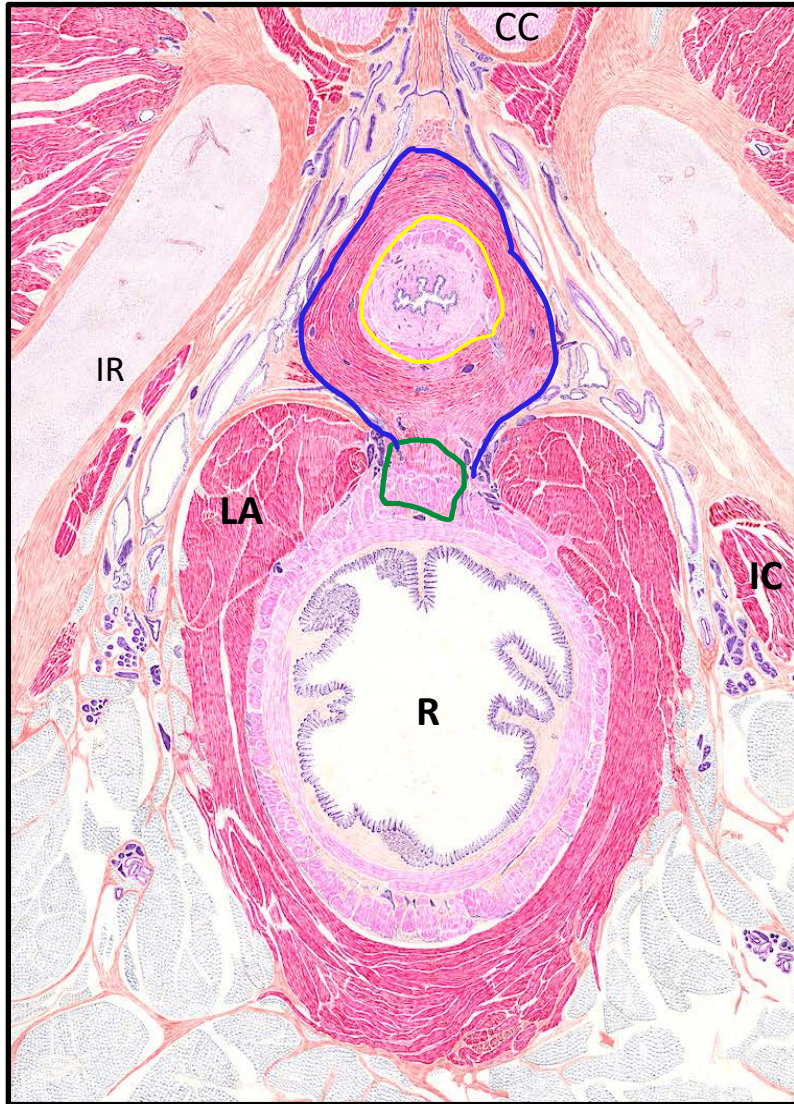
LA Levator anii
PC Pudendal canal
IR Ischiopubic ramii
CS Corpus spongiosum
IC Ischiocavernosus muscle
BC Bulbospongiosus muscle



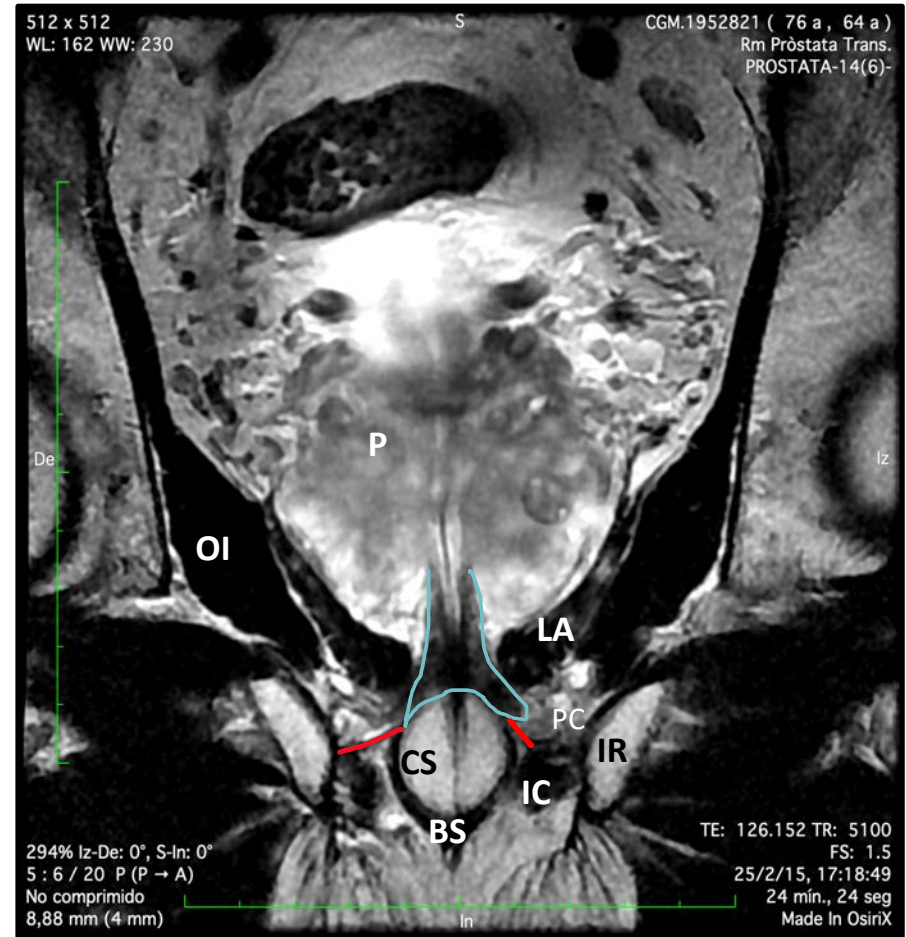
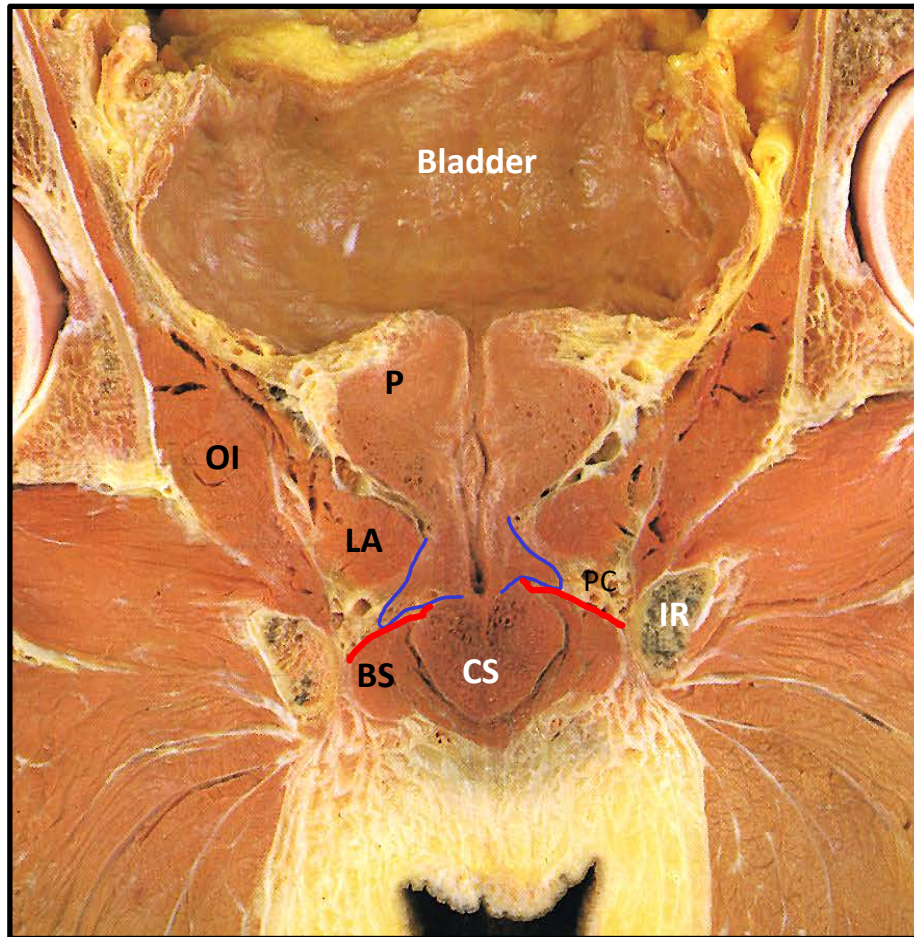
MRI of the External Urethral Sphincter



MRI of the External Urethral Sphincter



MRI of the External Urethral Sphincter



Σας ευχαριστώ πάρα πολύ για
την προσοχή σας!

