

Femoral Hernia after Previous Inguinal Herniorrhaphy *Introduction of a Modified Patch Repair with Local Anesthesia*

Hakan KULAÇOĞLU

Celil UĞURLU

Zafer ERGÜL

İpek ÖZYAYLALI

Gaye SEKER

 **Dışkapı Yıldırım Beyazıt Teaching and Research Hospital,
Department of Surgery, Ankara, Turkey.**

 **Ankara Hernia Center, Ankara, Turkey**



Operative findings in recurrent hernia after a Lichtenstein procedure

Morten Bay-Nielsen, M.D.^{a,*}, Pär Nordin, M.D.^b, Erik Nilsson, M.D.^c,
Henrik Kehlet, M.D., Ph.D.^a, for the Danish Hernia Data Base
and the Swedish Hernia Data Base

^a*Department of Surgical Gastroenterology, Hvidovre University Hospital, Hvidovre, Denmark*

^b*Surgical Department, Östersund Hospital, Östersund, Sweden*

^c*Surgical Department, Motala Hospital, Motala, Sweden*

Operative findings for recurrent hernia after a Lichtenstein procedure

Type of recurrence	DHDB		SHDB		All	
	n	%	n	%	n	%
Direct, over pubic tubercle	16	24	4	19	20	23
Direct, unspecified	25	38	9	43	34	39
Indirect	11	17	4	19	15	17
Femoral	9	14	2	10	11	13
Other/unclassifiable	5	8	2	10	7	8

DHDB = Danish Hernia Data Base; SHDB = Swedish Hernia Data Base.

Risk of femoral hernia after inguinal herniorrhaphy

T. Mikkelsen, M. Bay-Nielsen and H. Kehlet

Department of Surgical Gastroenterology 435 and the Danish Hernia Database, Hvidovre University Hospital, Hvidovre, Denmark

Correspondence to: Professor H. Kehlet, Department of Surgical Gastroenterology 435, Hvidovre University Hospital, DK-2650 Hvidovre, Denmark

(e-mail: henrik.kehlet@hh.hosp.dk)

	Femoral 'recurrence' (n = 71)	%0.2	Inguinal operations in database (n = 33 445)
Sutured posterior wall repair (except McVay)	20 (28.2)		7 960 (23.8)
McVay	1 (1.4)		739 (2.2)
Lichtenstein repair	38 (53.5)	%0.2	17 971 (53.7)
Other mesh (plug, etc.)	10 (14.1)		5 146 (15.4)
Laparoscopic	2 (2.8)		1 629 (4.9)

Values in parentheses are percentages

Femoral Hernia Repair *with Modified Patch Repair* after Previous Inguinal Herniorrhaphy

- Femoral hernia *rare*
- FH after inguinal hernia repair *still rare*
- Modified repair for *a small subset* of a specific problem

Why Femoral Hernia after Inguinal Herniorrhaphy

- ↑ upward tension on the inguinal ligament can open femoral canal wide [*Abrahamson*]
- ↓ inguinal hernia repair per se does not provide a disposition for femoral hernia itself [*Kehlet*]
 - *probably an overlooked hernia*

Femoral Hernia Repair after Previous Inguinal Herniorrhaphy

- 4-year period
- Totally 51 femoral hernias

	Men	Women
Age (years)		
< 40	7	5
40–60	8	15
> 60	29	7
Total	44	27

Repair methods for 51 femoral hernias

Mesh plug ^a	23
McVay's suture repair ^b	8
Modified Lichtenstein ^b	7
Plug and patch ^b	6
Preperitoneal prosthetic patch repair ^b	3
Novel patch repair ^a	3
Double-layer mesh ^c	1

^a via infra-inguinal approach

^b external oblique aponeurosis and transvers fascia opened

^c preperitoneal patch plus anterior mesh

Shouldice Clinic Approach for Femoral Hernia Repair

Repair	Indication
Complete groin repair	1. Primary femoral hernia 2. Concomitant bowel resection
Anterior sublay mesh	1. Recurrent femoral hernia 2. Prevascular hernia 3. Concurrent direct inguinal hernia 4. Tension upon suture repair
Infrainguinal plug	1. Previous intact inguinal hernia repair

Longterm Results of a Prospective Study of 225 Femoral Hernia Repairs: Indications for Tissue and Mesh Repair

Gabriel Chan, MD, Chin-Keung Chan, MD

J AmColl Surg 2008;207:360–367

SURGICAL TECHNIQUES

Prosthetic mesh plug repair of femoral and recurrent inguinal hernias: the American experience

Alex G Shulman MD FACS

Attending Staff

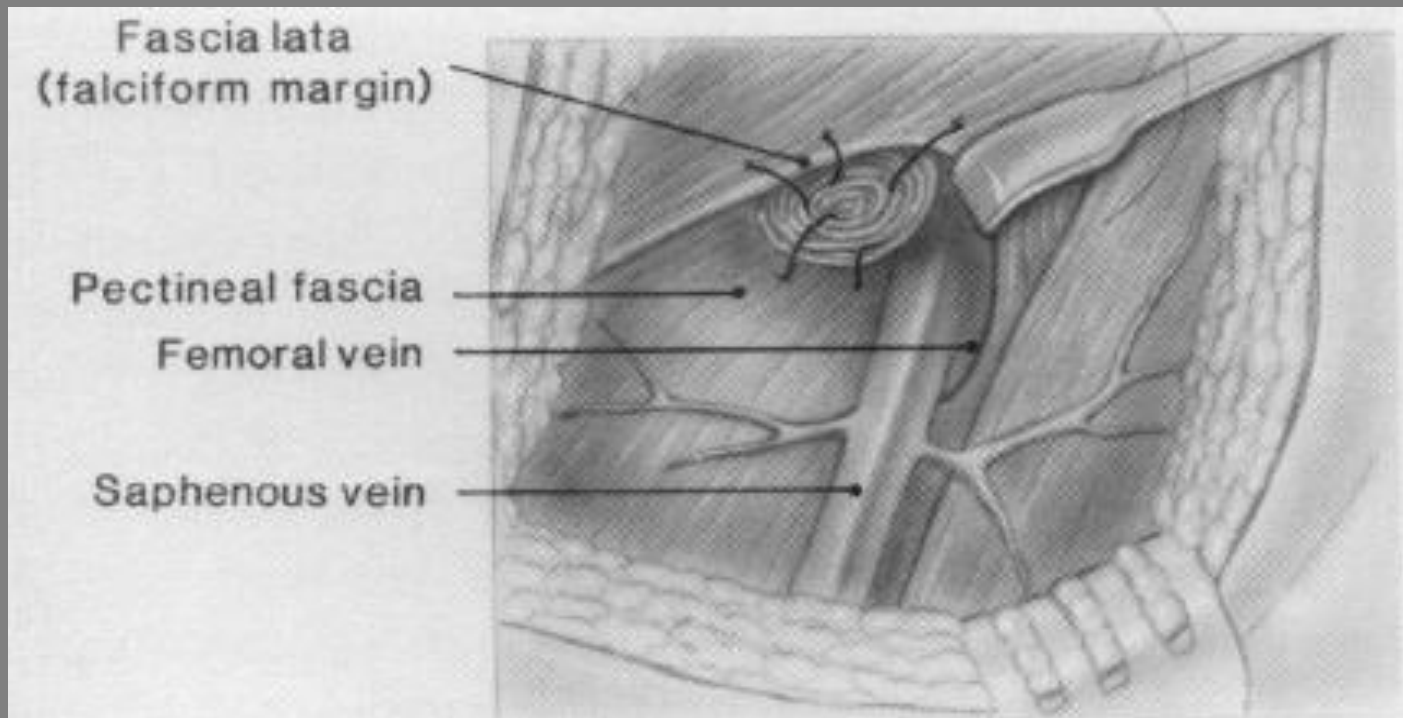
Parviz K Amid MD FACS

Courtesy Staff

Irving L Lichtenstein MD FACS

Emeritus Staff

Department of Surgery, Cedars-Sinai Medical Center, Los Angeles, California, USA



PIONEERS IN HERNIA SURGERY

Parviz K. Amid

Lichtenstein tension-free hernioplasty: Its inception, evolution, and principles

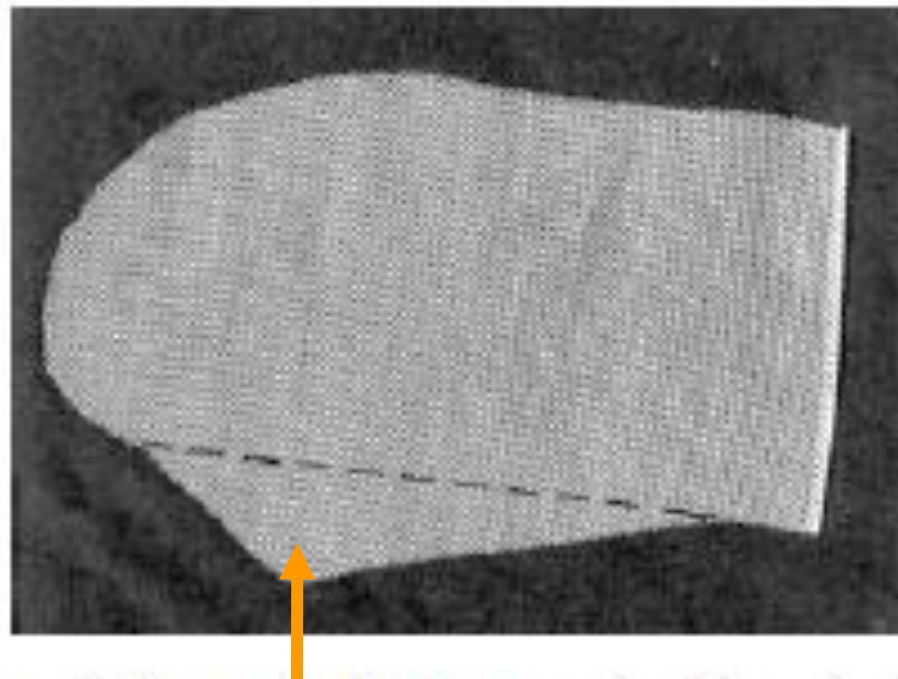


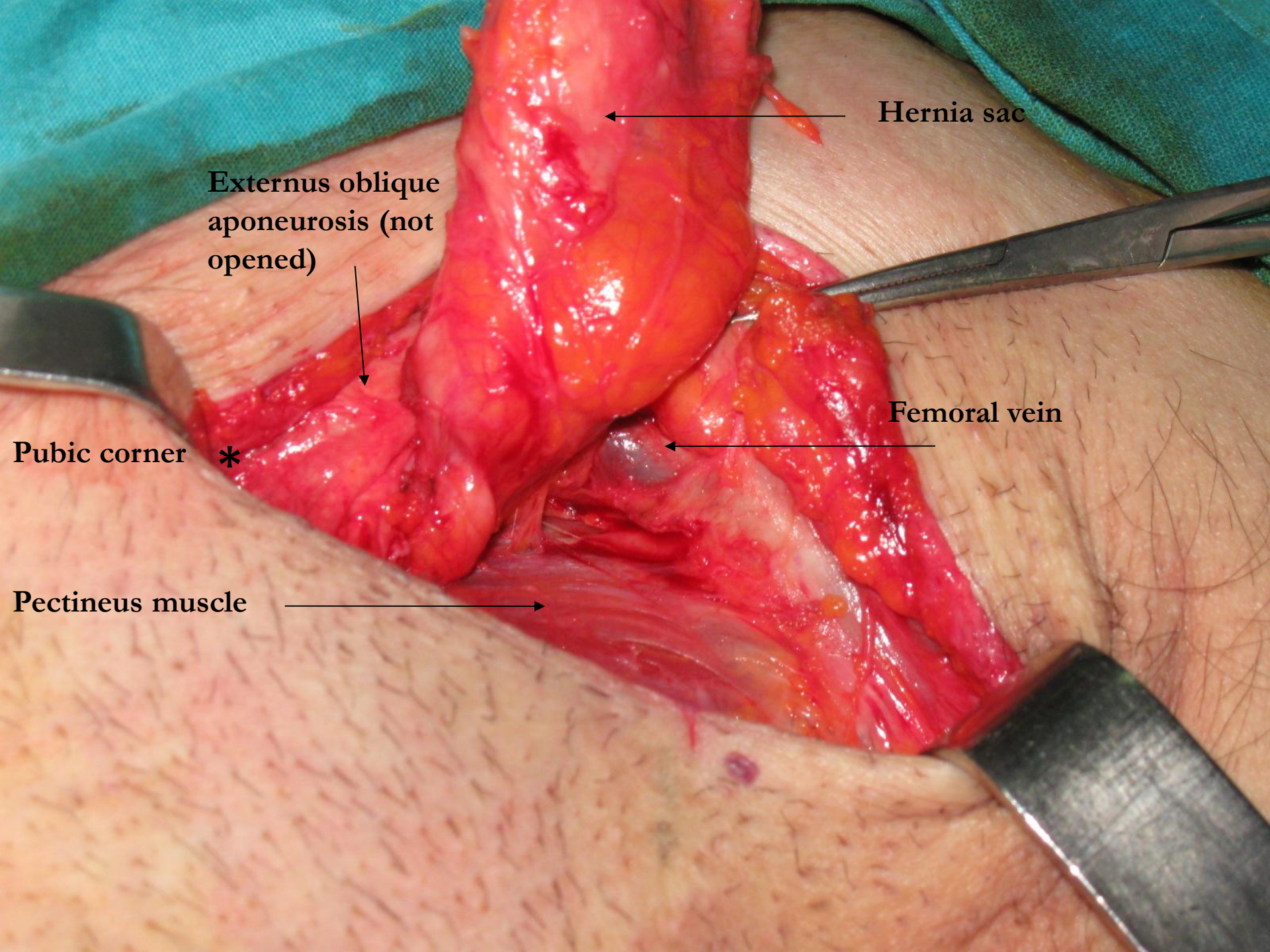
Fig. 6 Shape of the mesh for the repair of inguinofemoral and isolated femoral hernias. The long side of the triangular extension of the mesh is sutured to the Cooper's ligament, and the body of the mesh is sutured to the inguinal ligament along the *broken line*

ORIGINAL ARTICLE

G. Campanelli · D. Pettinari · F. M. Nicolosi
M. Cavalli · E. Contessini Avesani

Inguinal hernia recurrence: classification and approach

Types	Features	Technique	Anaesthesia	Distribution	
R1	Near the internal inguinal ring	First recurrence, reducible, thin patient, wall defect < 2 cm	Gilbert with plug repair	Local anaesthesia, day surgery	26 cases (9.4%)
R2	Above the pubic tubercle	First recurrence, reducible, thin patient, wall defect < 2 cm	Wantz with pre-peritoneal mesh	Local anaesthesia, day surgery	168 cases (60.6%)
R3	Whole inguinal wall defect	Multi-recurrence and/or irreducible and/or extended wall defect, femoral recurrence	Stoppa, Wantz with <u>pre-peritoneal mesh</u>	General anaesthesia, <u>1 or 2 day surgeries</u>	83 cases (30%)



Hernia sac

Externus oblique
aponeurosis (not
opened)

Femoral vein

Pubic corner *

Pectineus muscle

Externus aponeurosis

Inguinal ligament

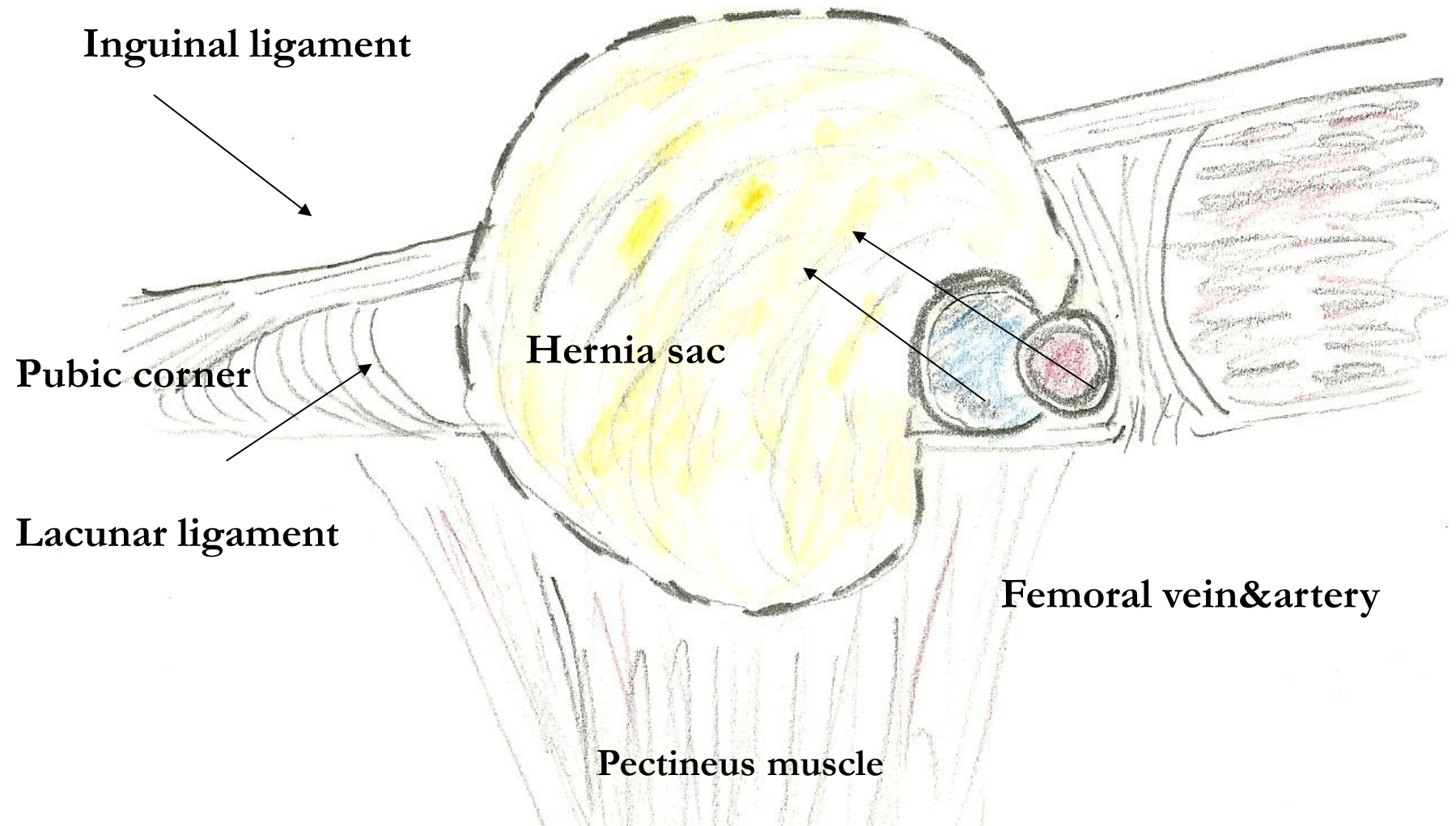
Hernia sac

Pubic corner

Lacunar ligament

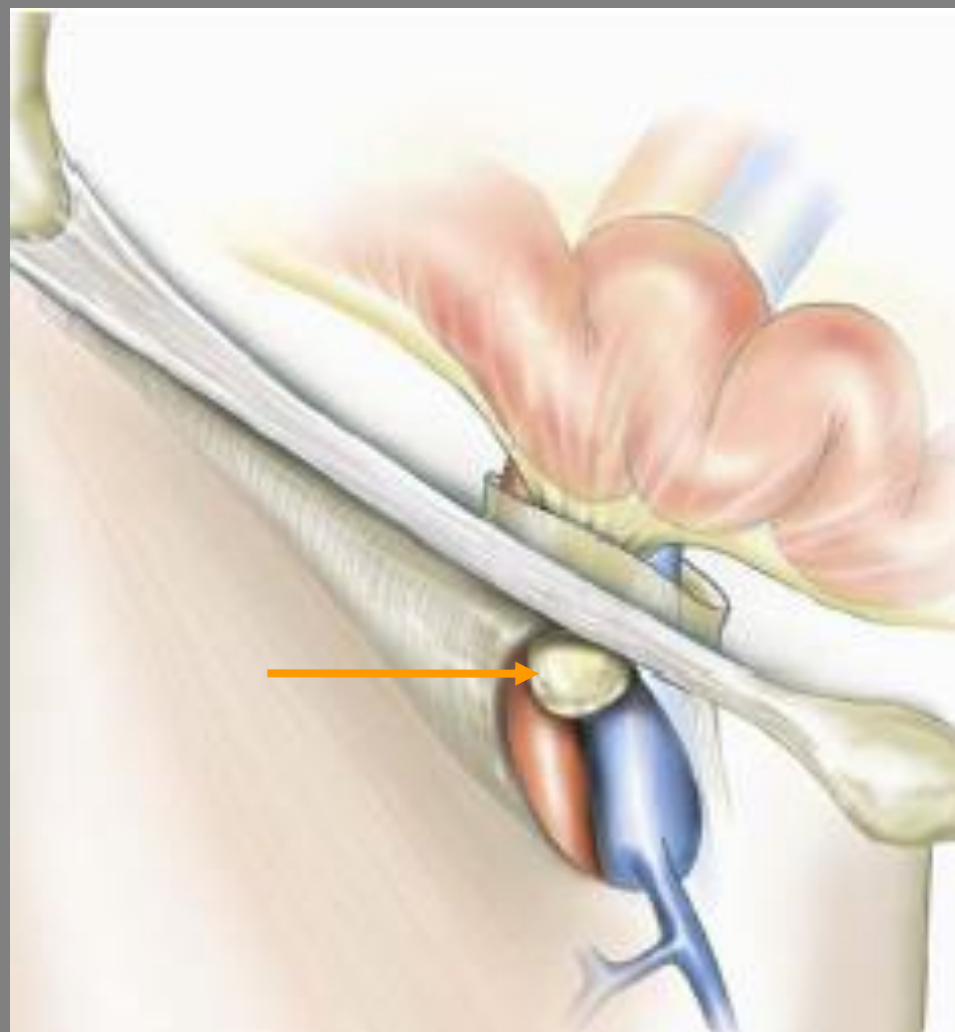
Femoral vein&artery

Pectineus muscle



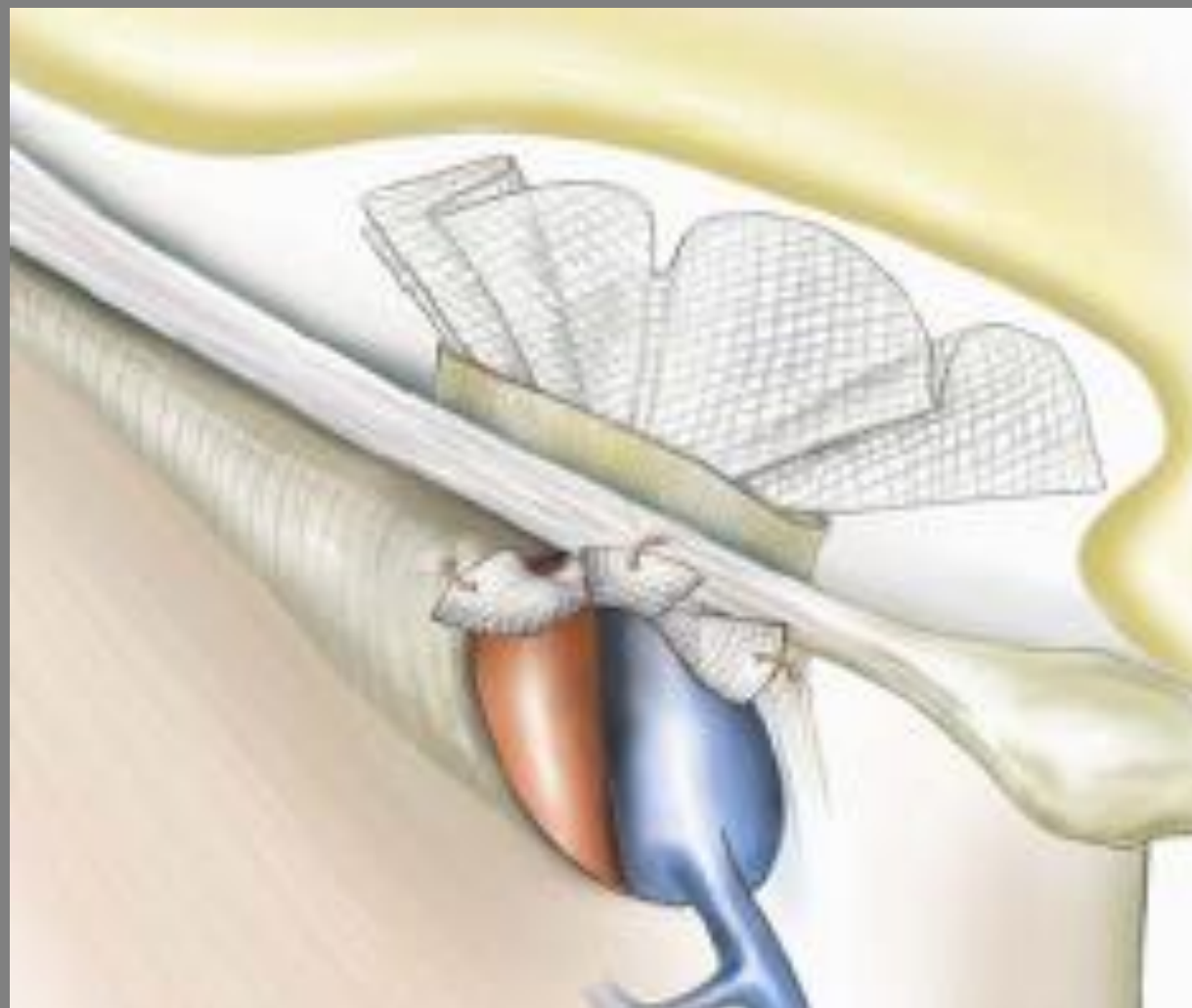
Prosthetic repair of prevascular femoral herniation

G. L. Williams · A. Riddell · J. Coulston · B. Frost ·
B. M. Stephenson



Prosthetic repair of prevascular femoral herniation

G. L. Williams · A. Riddell · J. Coulston · B. Frost ·
B. M. Stephenson

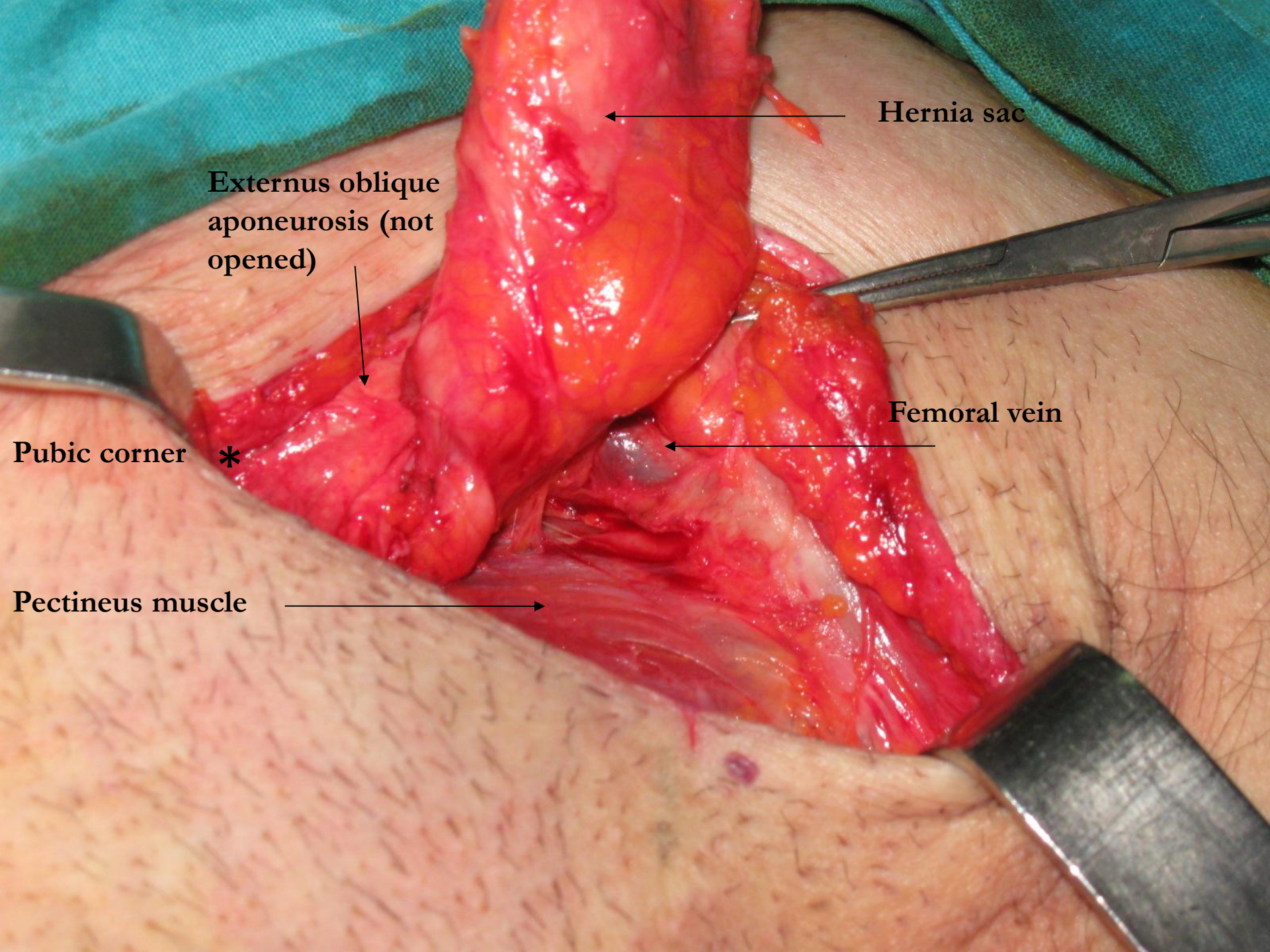


Prosthetic repair of prevascular femoral herniation

G. L. Williams · A. Riddell · J. Coulston · B. Frost ·
B. M. Stephenson

Age (years)	Preoperative diagnosis	Previous surgery	Anaesthetic	Follow-up (months)
68	No	None	GA	98
46	Yes	IH 1961	GA	41
80	Yes	IH 1991; F-P 1992	Regional	31
48	Yes	IH 1989	Regional	22
82	No	IH 1981	Regional	21
72	Yes	IH 1978	Regional	15

IH inguinal hernia, *F-P* femoral–popliteal bypass graft, *GA* general anaesthesia



Hernia sac

Externus oblique
aponeurosis (not
opened)

Femoral vein

Pubic corner *

Pectineus muscle

Externus aponeurosis

Inguinal ligament

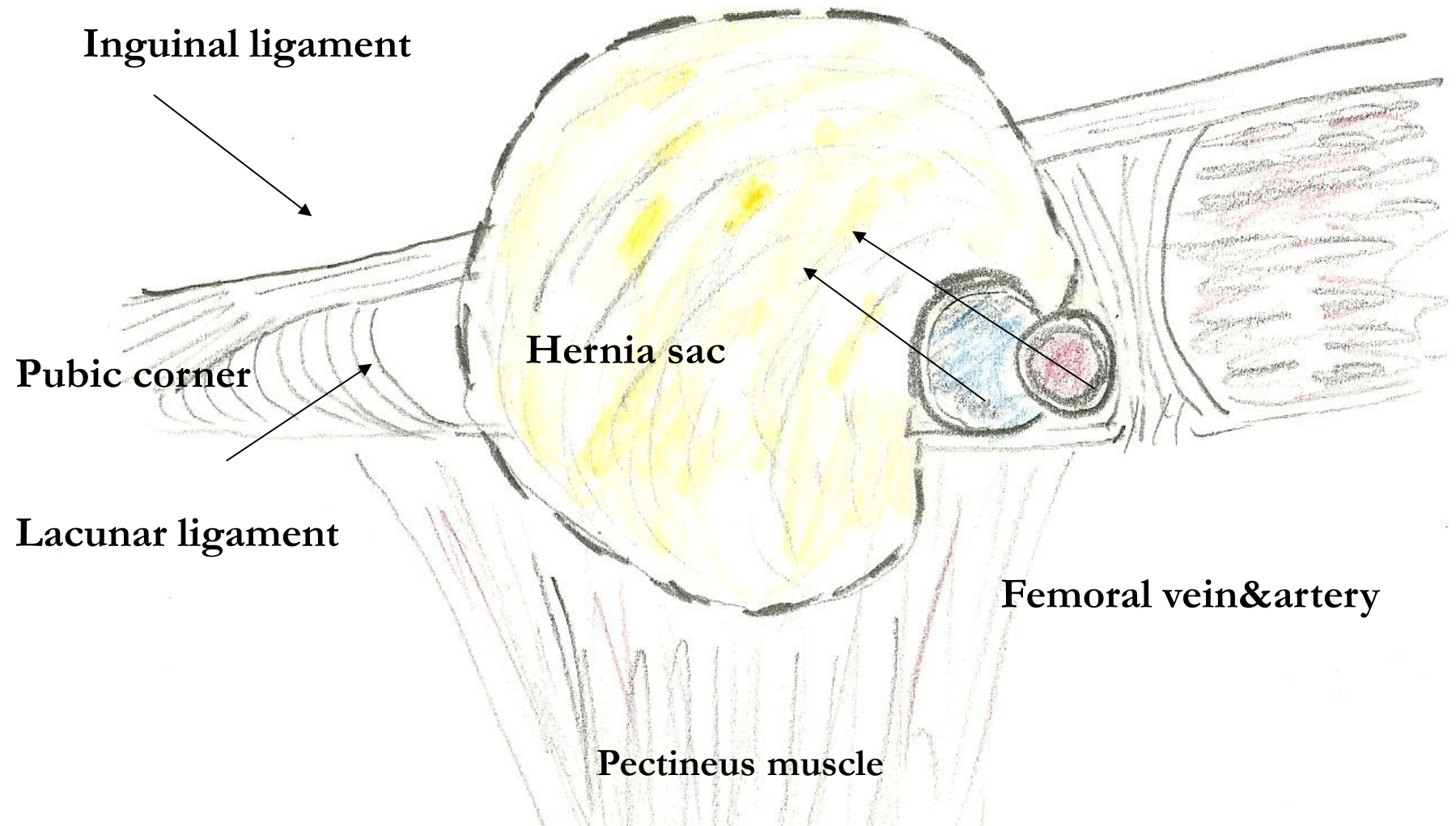
Hernia sac

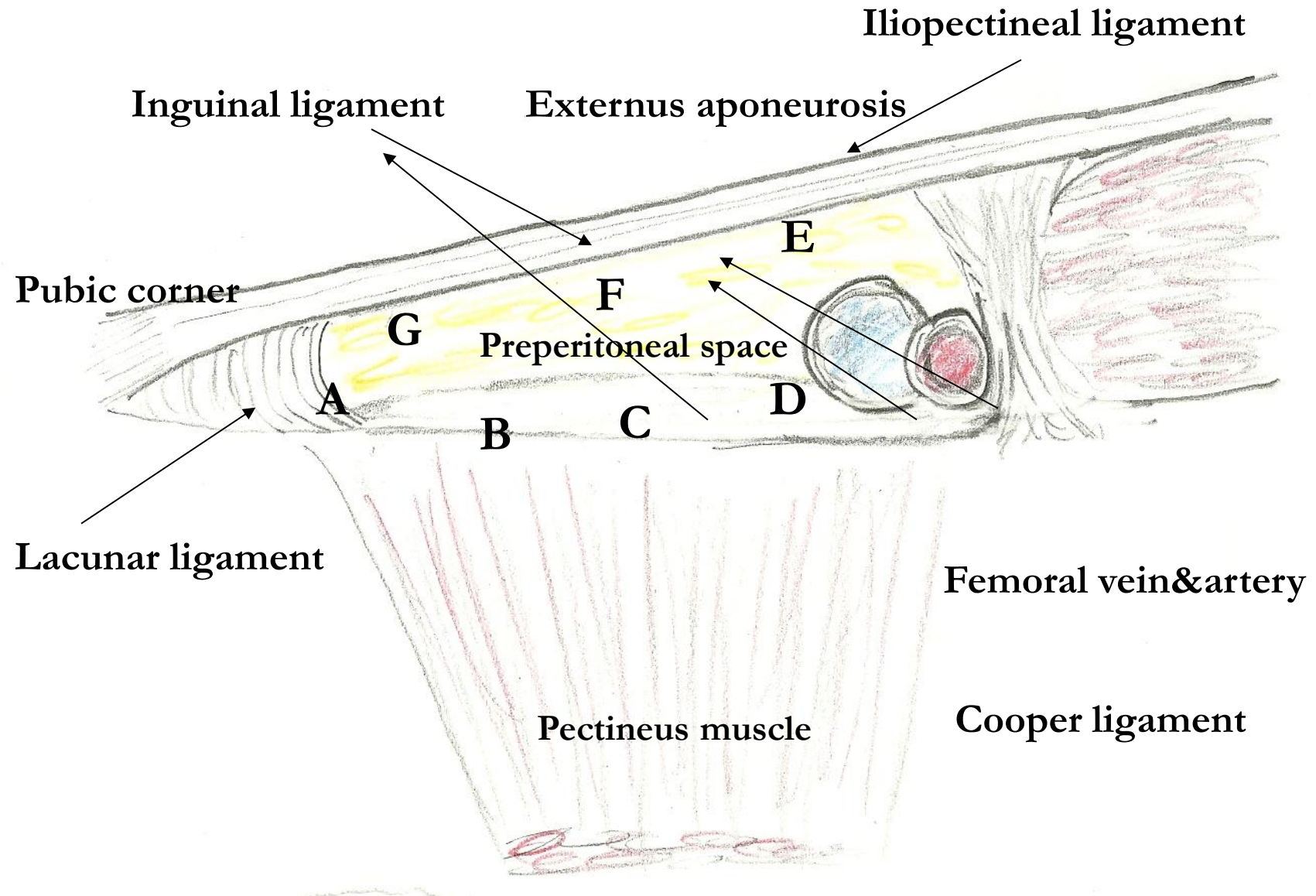
Pubic corner

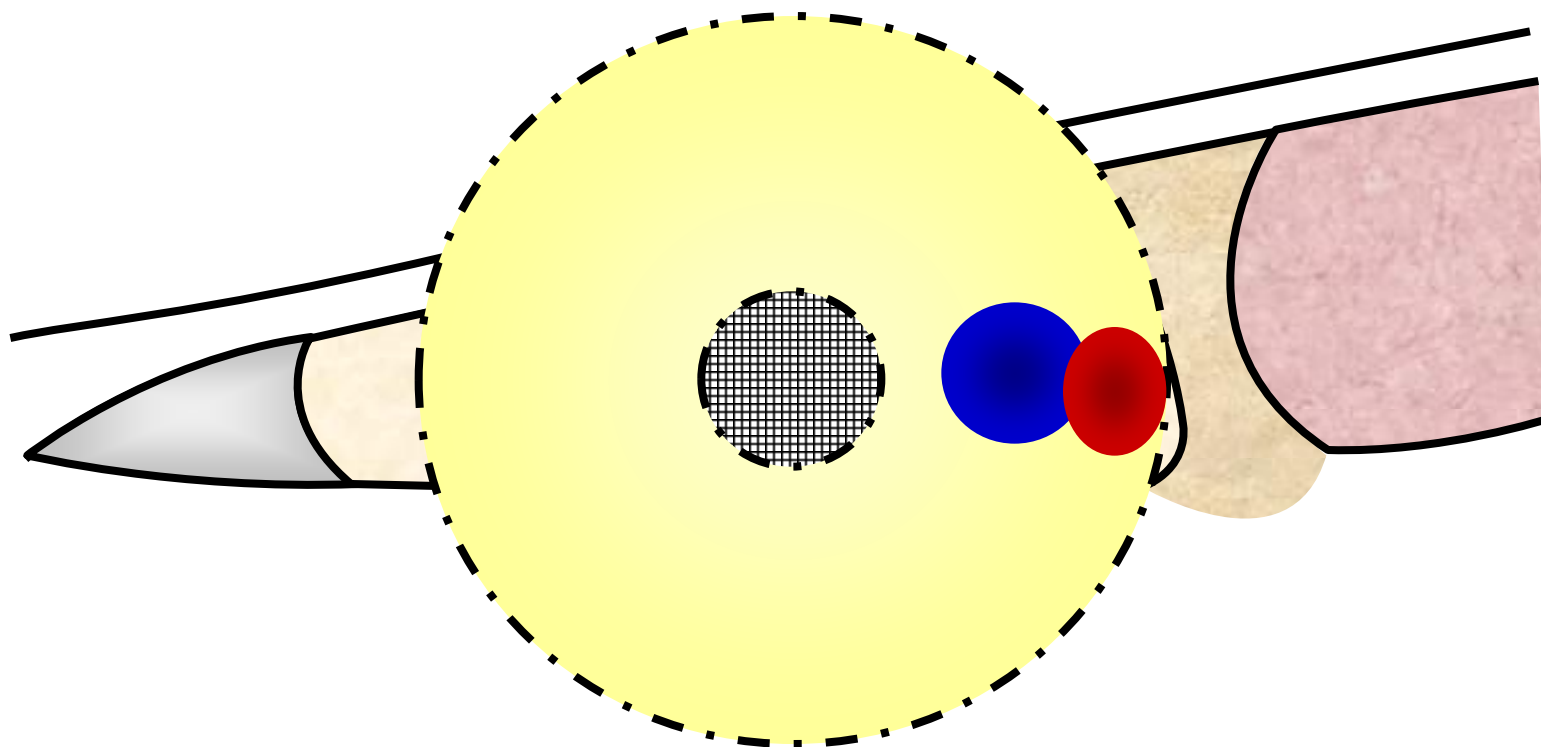
Lacunar ligament

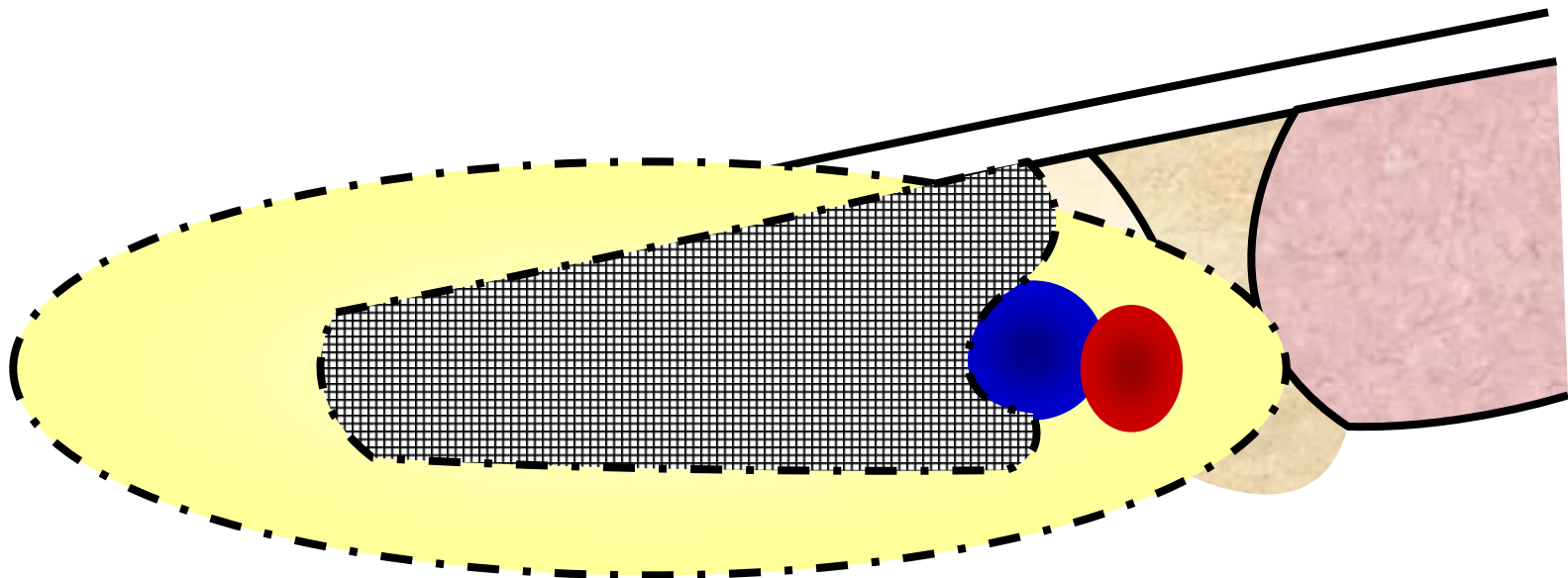
Femoral vein&artery

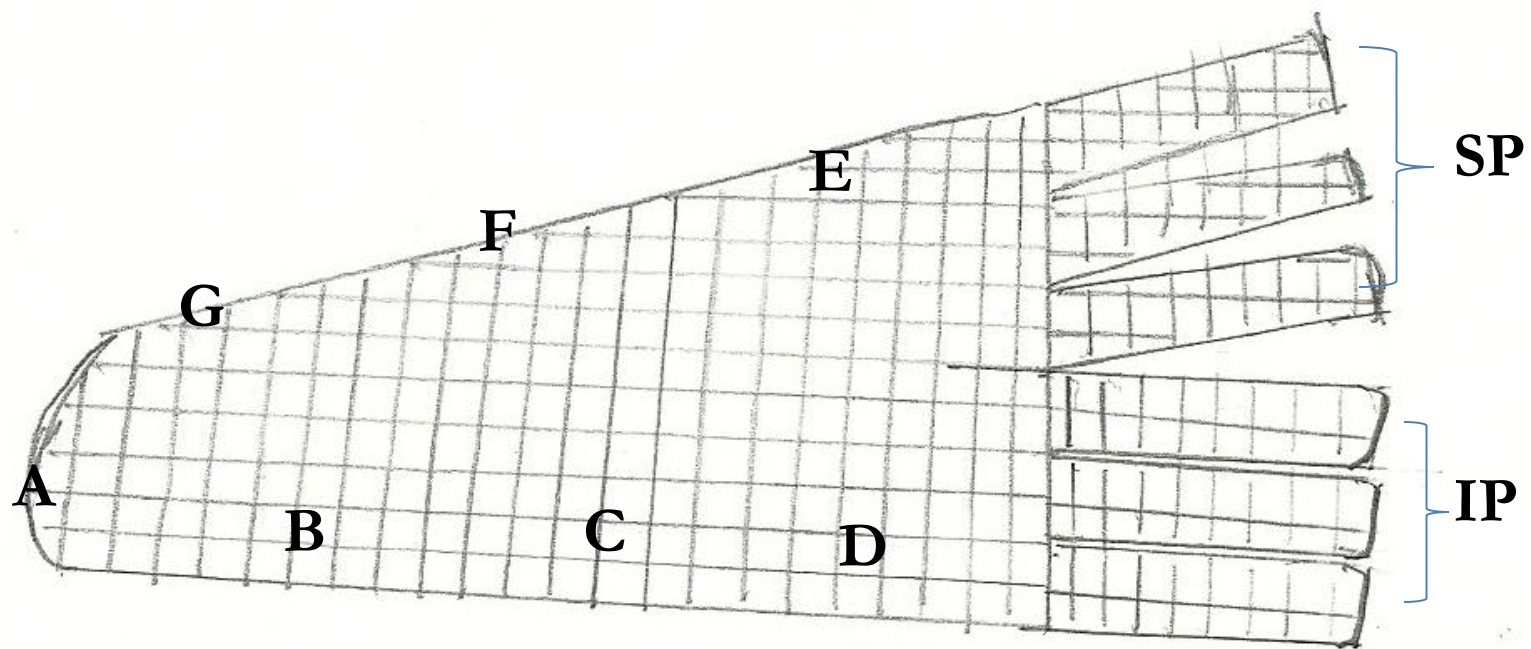
Pectineus muscle

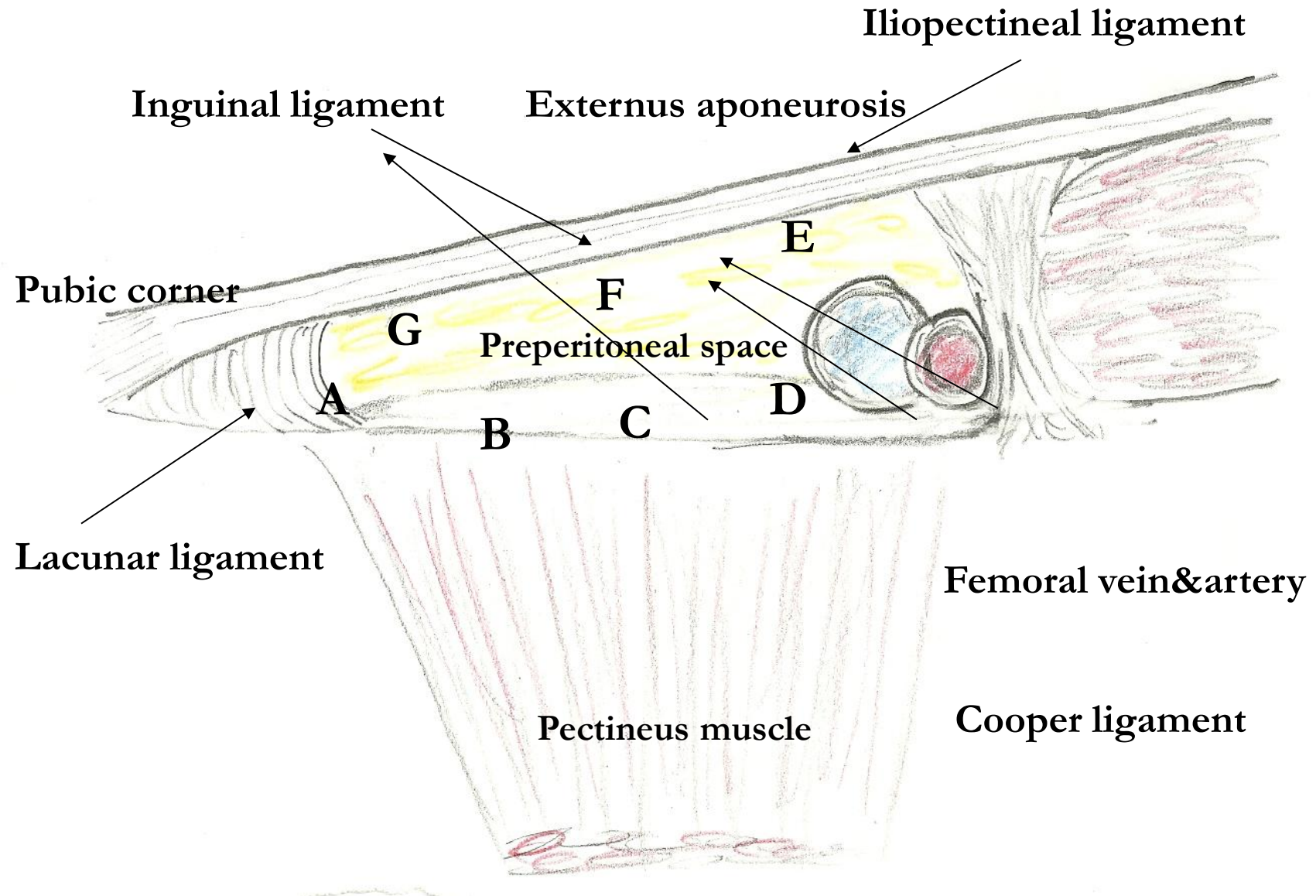


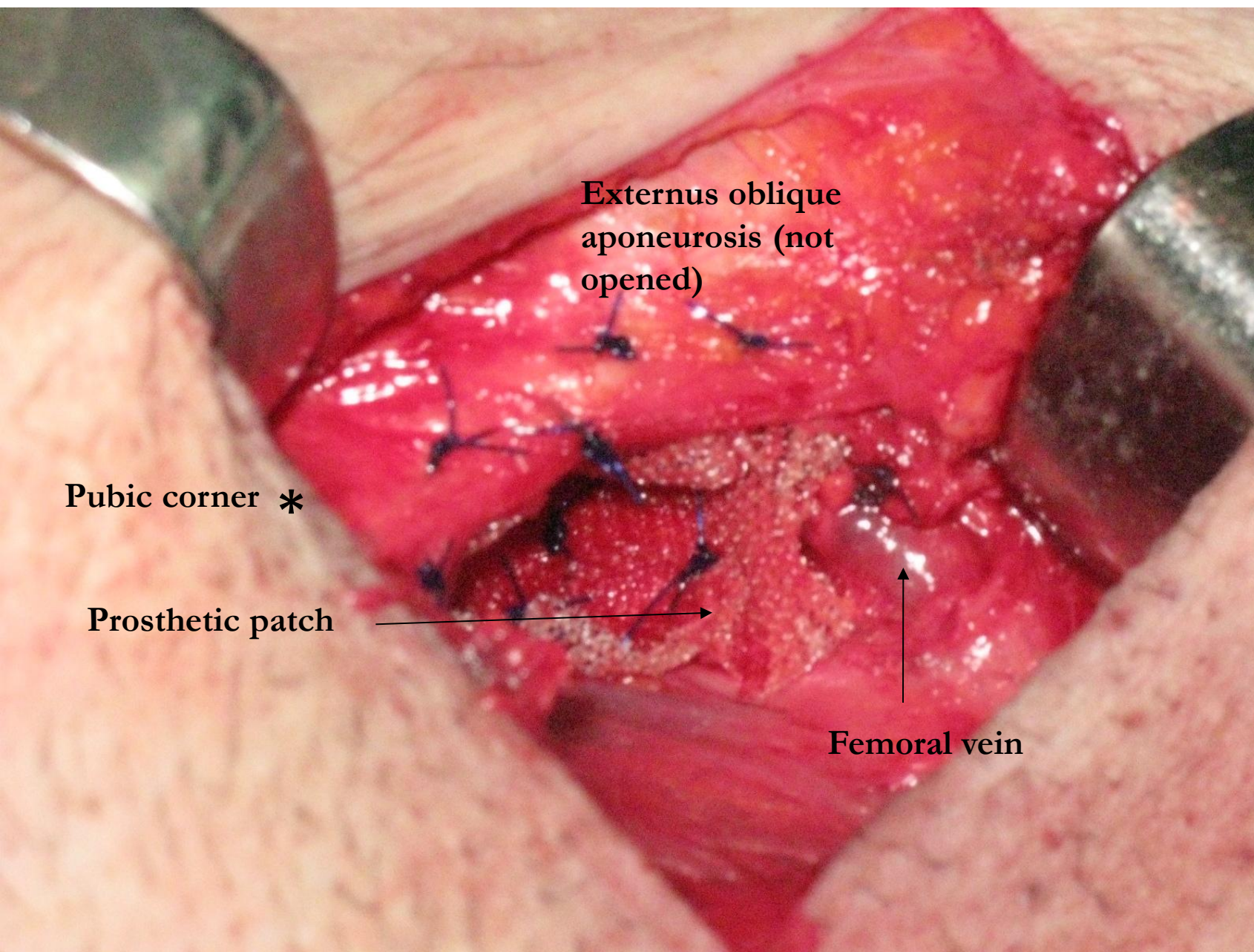












Externus oblique
aponeurosis (not
opened)

Pubic corner *

Prosthetic patch

Femoral vein

Repair methods for 51 femoral hernias

Gender	Age (years)	Preoperative diagnosis	Previous repair (interval; month)	Anesthesia	Incision	Defect diameters (mm)	Mesh	Follow-up (months)
Male	31	Yes	Lichtenstein (1)	Local	Inguinal	45x30	Standard PP ^a	27
Male	38	Yes	Lichtenstein (20)	Local	Infra-inguinal	40x25	Composite ^b	6
Male	79	No	Lichtenstein (59)	Local	Inguinal	60x35	Lightweight PP ^a	1

^a pure polypropylene

^b polypropylene plus polyglactone

A prospective comparison of preperitoneal tension-free open herniorrhaphy with mesh plug herniorrhaphy for the treatment of femoral hernias

Jie Chen, PhD,^{a,b} Yi Lv, PhD,^a YingMo Shen, MD,^b SuJun Liu, MD,^b and MingGang Wang, MD,^b
Xi'an and Beijing, China

Conclusion. Preperitoneal herniorrhaphy seems to be associated with a lesser recurrence rate, less sensation of a foreign body postoperatively, and a lesser incidence of seroma formation compared with the mesh plug technique in the repair of femoral hernias. Preperitoneal herniorrhaphy provides better vision of the operative field, is flexible, and allows exploration of the inguinal canal during the procedure. (Surgery 2010;■:■-■.)

Table II. Patient outcomes

	Preperitoneal group (n = 45)	Plug group (n = 40)	P value
Duration of follow-up (mos)	34.0 ± 19.7	35.9 ± 22.6	.6840
Operation time (min)	43.0 ± 8.8	42.4 ± 8.8	.7442
Postoperative duration of stay (d)	2.3 ± 1.1	2.2 ± 1.0	.6916
VAS	2.1 ± 0.8	2.1 ± 0.8	.9634
Recurrence	0 (0)	4 (10)	.0451*
Wound infection	1 (2)	3 (7)	.3383
Seroma	2 (4)	8 (20)	.0409*
Foreign body sensation	0 (0)	6 (15)	.0088*

Data are presented as mean values ± standard deviation or number and percent in parenthesis.

* $P < .05$ signifies statistical significance and analyzed with the t test and Fisher's exact test.

VAS, Visual analog scale.

Femoral Hernia Repair *with Modified Patch Repair* after Previous Inguinal Herniorrhaphy

- Does not abolish previous inguinal repair
- Less invasive (than inguinal approach)
- Less foreign body sensation (than a plug)
- Feasible with local anesthesia (unlike laparoscopy)