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256 Multi role regiment

Business Use

Agenda

- Brief look at groin pain
- Aetiology of pain in athletes
- Treatment modalities
- Surgery
- Laparoscopic Surgery
- SPoRT score
- Conclusion

OUCH !

Painful Groin in Athletes

- Various definitions have been described essentially describing the same condition
  - Athletic pubalgia
  - Incipient hernia
  - Groin disruption
  - Gilmore’s groin
  - Sportsman’s hernia/groin
  - Pubic inguinal pain syndrome
  - Inguinal Disruption
  - Inguinal related groin pain

Nature of Pain

- Acute or Chronic
- Multifactorial – 27% of cases
- Fixing one problem may not cure the pain
- Need to approach the patient in a multidisciplinary manner
- Understanding of the anatomy is important

- Bradshaw et al BJSM 2008;42:851-4
- Pilkington et al Surg Endosc 2020; Sep

History of Pain experienced

- Where, how long, trigger points
- Sport
  - Ice hockey
  - Football (Soccer)
  - Baseball
  - Rugby
- Previous history/ surgery
- Other injuries
- Time OFF sport
- Hip/adductor/groin

Business Use

Initial assessment results

- Completed - History and examination
- Provide a good guide to the actual cause of pain
- Coughing and sneezing – inguinal related
- Deep pain and snapping – Hip pathology
- Sudden ‘strain’ bruising – adductor related
- Clinical signs more or less matching the aetiology

Business Use

Top 5 - Groin pain in athletes

(Darren de SA et al BJSM 2016;0:1-8)

- Over 4600 patients, mean age 27.4 years – 80% as below
- Femoroacetabular impingement (FAI) – 32%
- Athletic pubalgia/ inguinal disruption – 24%
- Adductor related pathology – 12%
- Inguinal pathology (true hernia) – 10%
- Labral pathology – 5%

Business Use

Groin pain in athletes
Questions?

- Is surgery always recommended?

- When should we operate?
  - Immediately
  - Delayed
  - Only if he can afford it ? $/£/Euro

- Is Laparoscopic surgery preferred?

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Br J Sports Med doi:10.1136/bjsports-2013-092872

Consensus statement

'Treatment of the Sportsman's groin': British Hernia Society's 2014 position statement based on the Manchester Consensus Conference

Aali J Sheen[1], B M Stephenson[2], D M Lloyd[3], P Robinson[4], D Fevre[5], H Paajanen[6], A de Beaux[7], A Kingsnorth[8], O J Gilmore[9], D Bennett[10], I Maclennan[1], P O'Dwyer[11], D Sanders[8], M Kurzer[12]

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ID Clinical signs

- For a diagnosis to be made suggest three out of the five should be present:
  - Pinpoint tenderness over the pubic tubercle at the point of insertion of the conjoint tendon;
  - Palpable tenderness over the deep inguinal ring;
  - Pain and/or dilation of the external ring with no obvious hernia evident
  - Pain at the origin of the adductor longus tendon; and
  - Dull, diffused pain in the groin, often radiating to the perineum and inner thigh or across the midline.

Business Use

Groin Pain Differential

- Hernia
  - Hernia defect
  - Lipoma of cord
  - Femoral defect
  - Posterior wall defect
- Femoral artery aneurysm
- Saphena Varix
- Femoral/ Inguinal nodes

Business Use

Groin Pain Differential

- Cyst/ hydrocele in canal of Nuck
  - Patent processus vaginalis in women
- Hydrocele in men
  - Patent processus in men
- Testicular abnormalities
  - Infection
  - Malignancy
- Epididymis cysts/ infection
- Varicoceles

Where else could the pain be coming from?

- Adductor tendon
- Inguinal canal
  - Conjoined tendon
- Psoas muscle
- Pubic bone
- Rectus adductor aponeurosis
- Hip Joint

Business Use

Inguinal cause

Exclusion of other pathology is essential

Business Use

Inguinal – Good History!

- Triggered by sporting activities
- Mainly lower body movements
- Rapid acceleration and deceleration
- Frequent changes in direction
- Reduced time spent in sport
- Can affect 10-18% of elite footballers

- Holmich et al BJSM 2007;41:247-52
- Nicholas et al Sports Med 2002;32:339-44

Imaging

- No real test is used in isolation
- Ultrasound and MR groin are the two modalities that should ideally be utilised
- Ultrasound may well identify a posterior wall defect, but this can also be present after surgical repair
- MR is essentially used to exclude other pathologies – hip
- In the present climate clinical examination alone is probably insufficient.

    - Sheen et al BJSM Consensus statement 2014

Business Use

Treatment

Depends on cause

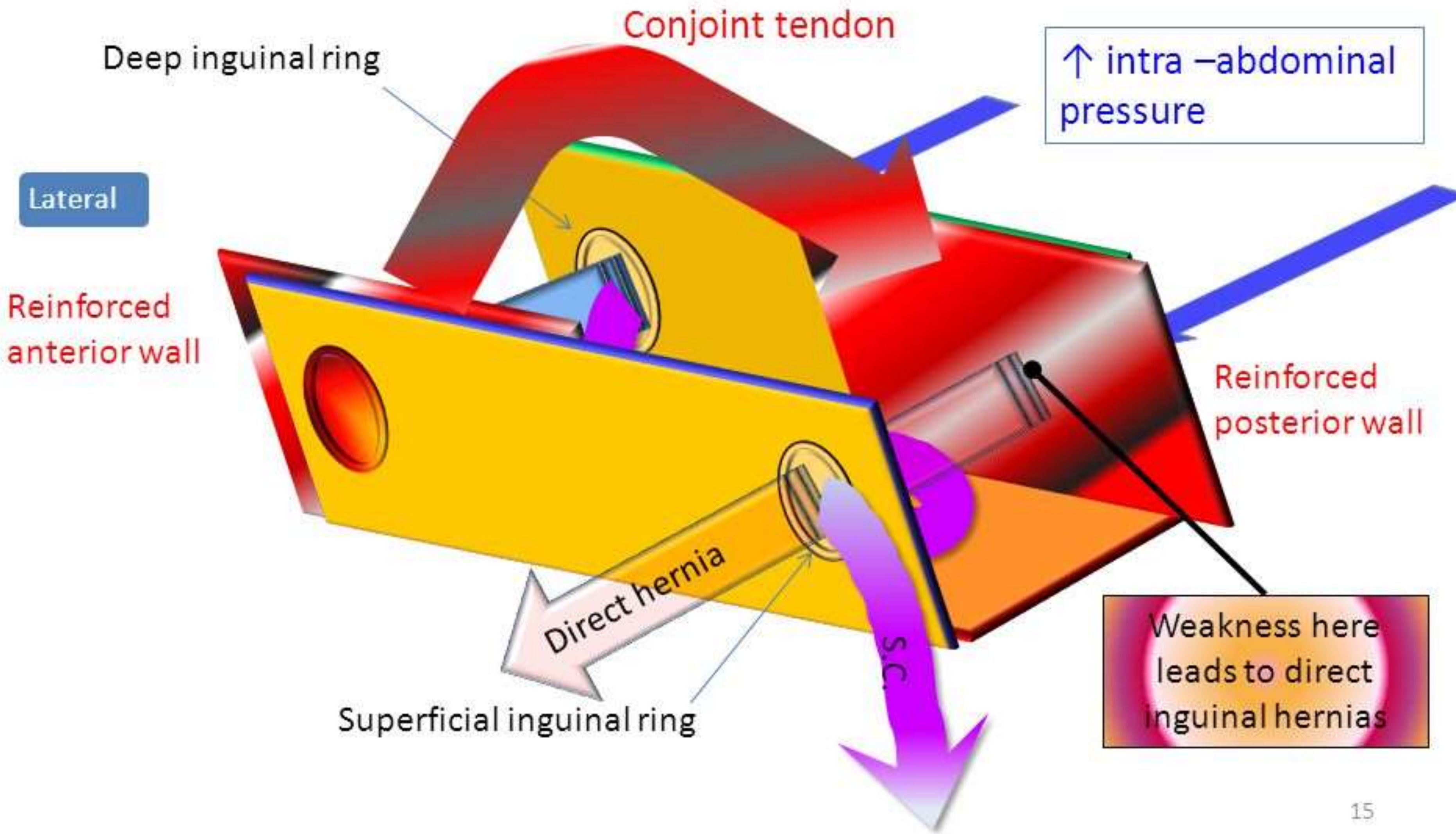
Business Use

Surgery for inguinal pain?

MUST get the diagnosis correct before this is contemplated!

Business Use

Pressures in the inguinal canal

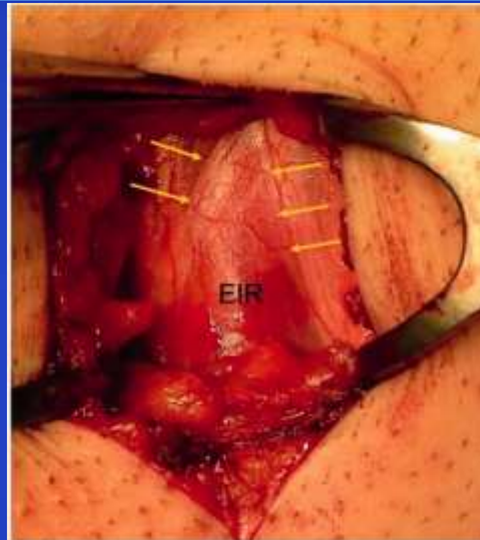


Surgical options

- Aware of two types each of open and keyhole surgery
- Open repair with placement of a mesh under the external oblique aponeurosis
  - Conjoint tendon can be divided and approximated loosely with mesh reinforcement
  - Bilateral (risk of pain on other side)
  - 5% of surgeons offered bilateral repair routinely (EHS survey 2013)
  - Longer post operative recovery
- Munich repair (minimal repair)
  - Posterior wall suture
  - Tightening of the conjoint tendon +/- nerve division

Business Use

Open surgery



External Ring micro-tears?

Never measured
Not quantifiable
Not compared to normal subjects or patients with inguinal hernia
Can identify a posterior bulge or weakness
CAN Avoid mesh

Dimitrakopoulou A et al J Hip Preserv Surg 2016;3(1):16-22

Business Use

Laparoscopic view

- Allows visualisation of both External and Internal rings
- Can view ilio-tibial tract
- Area lateral to internal ring
- Obturator fascia
- Psoas Muscle and nerves
- Nerves
- BUT WILL involve MESH (!)

Business Use

Hesselbach's triangle

Epigastric vessels

Rectus abdominus

Direct inguinal hernia

Indirect inguinal hernia

Sports hernia

Lacuna

Cooper's ligament

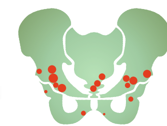
Femoral hernia

Ilioinguinal ligament

Vas

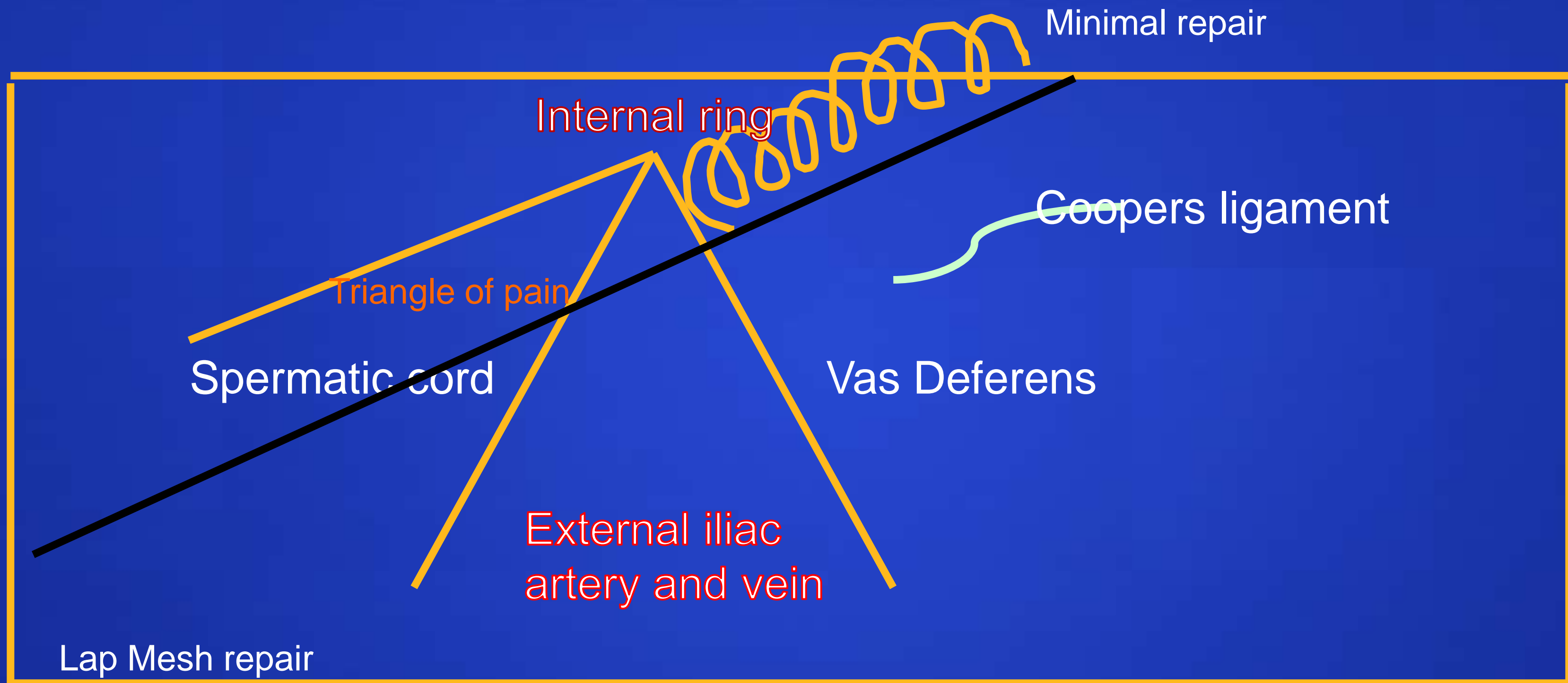
Testicular vessels

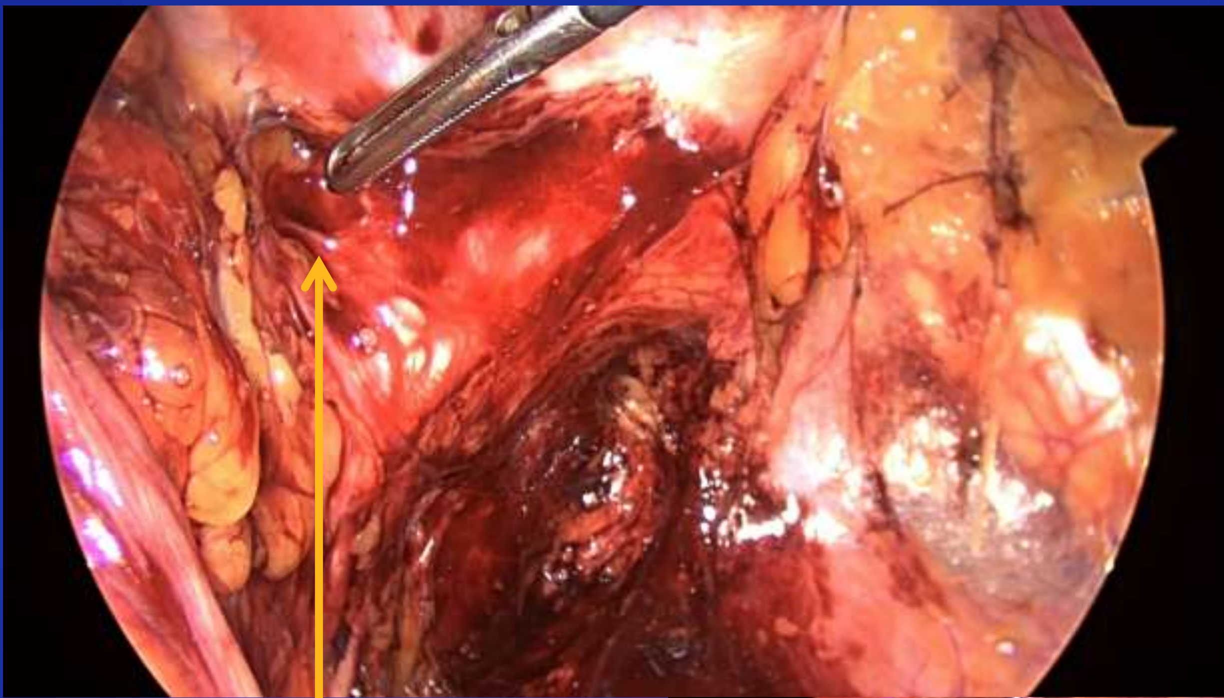
Iliac vessels

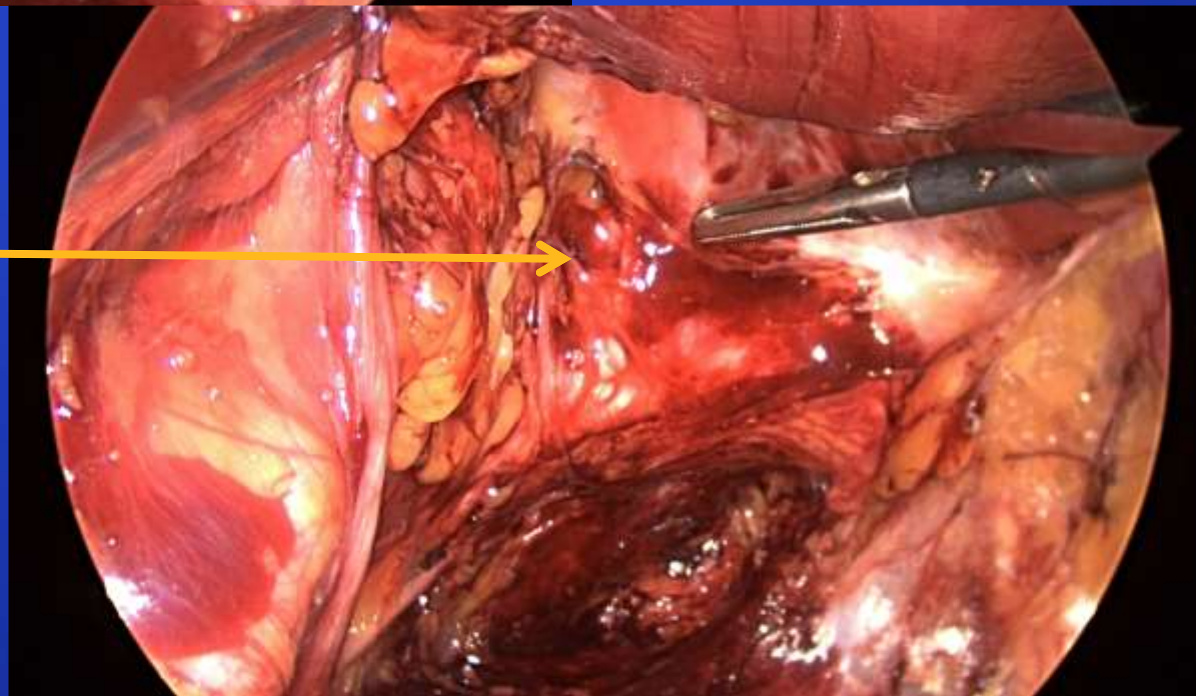


HIP&GROIN
CLINIC

Laparoscopic Mesh Fixation Principles

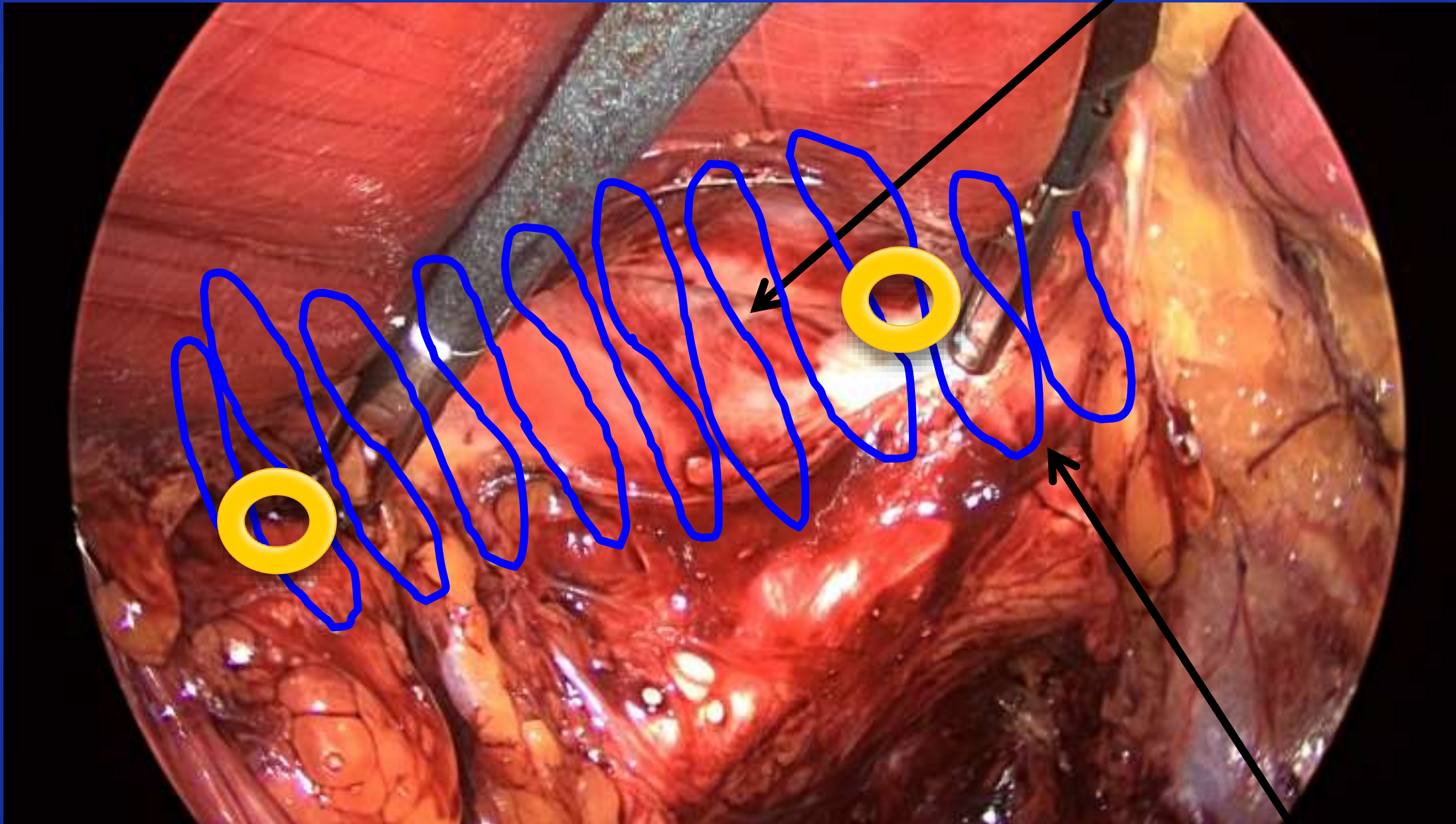






Tears/ damage

Business Use


Posterior wall
Minimal repair

Laparoscopic surgery

- Surgeon's operative technique remains crucial as experience varies with TAPP being historically the dominant operation undertaken.
- Over the last 20 years very few studies in total have been reported predominantly due to the small number of patients that present with ID.
- No clear minimal access technique has been shown to be superior as all reports to date show excellent results
- No direct comparison has been made to date with open and laparoscopic surgery – UNTIL NOW!

Business Use

Laparoscopic v open surgery – RCT

Sheen et al Br J Surg 2019 106(7): 837-844

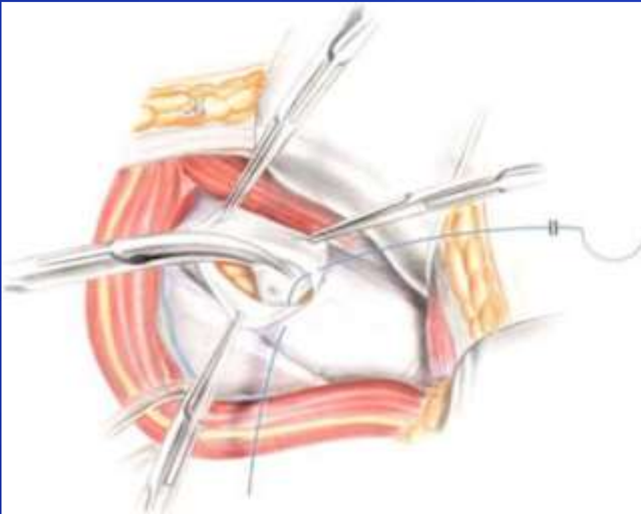
- An RCT comparing open "minisuture" repair to TEP has been undertaken.
- The aim of this study is to compare open and laparoscopic techniques with the time to return to the 'chosen sport' as the primary outcome measure.
- Clinical Trials NCT01876342.

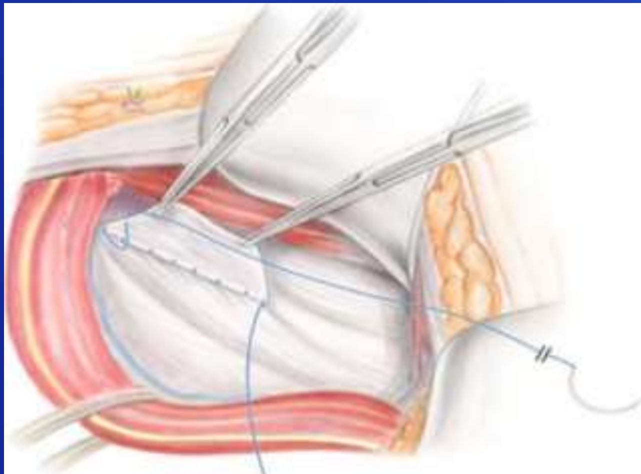
OMR v TEP (Multi-centre RCT)

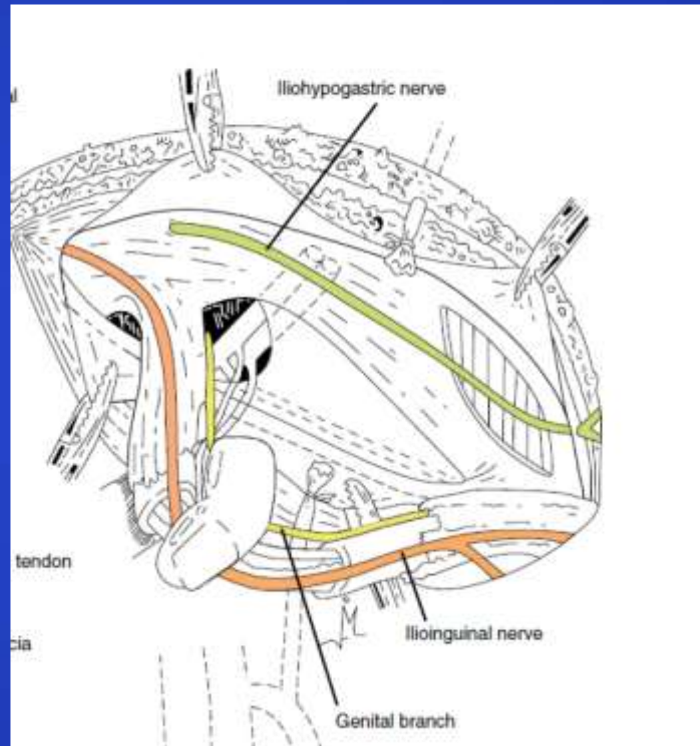
- 2013-2017
- 33 v 30 (TEP v OMR)
- 54% of athletes were footballers
- MR negative in 60% of players
- 4 weeks pain free patients =
  - 4 TEP
  - 0 OMR

Business Use

OMR







Continuous suture in posterior wall with preservation of the
Genital branch of the Genitofemoral nerve

Business Use

OMR v TEP Results

- Pain scores after 1, 2 and 4 weeks were not statistically different between the two groups (p = 0.4236, 0.8371 & 0.2406 respectively
- Return to full sporting activity after 1 month was achieved in
  - 51% v 50% (TEP v OMR) (p= 0.9904)
  - 91% v 80% (TEP v OMR after 3 months (p=0.4038).

Business Use

Conclusion of OMR v TEP

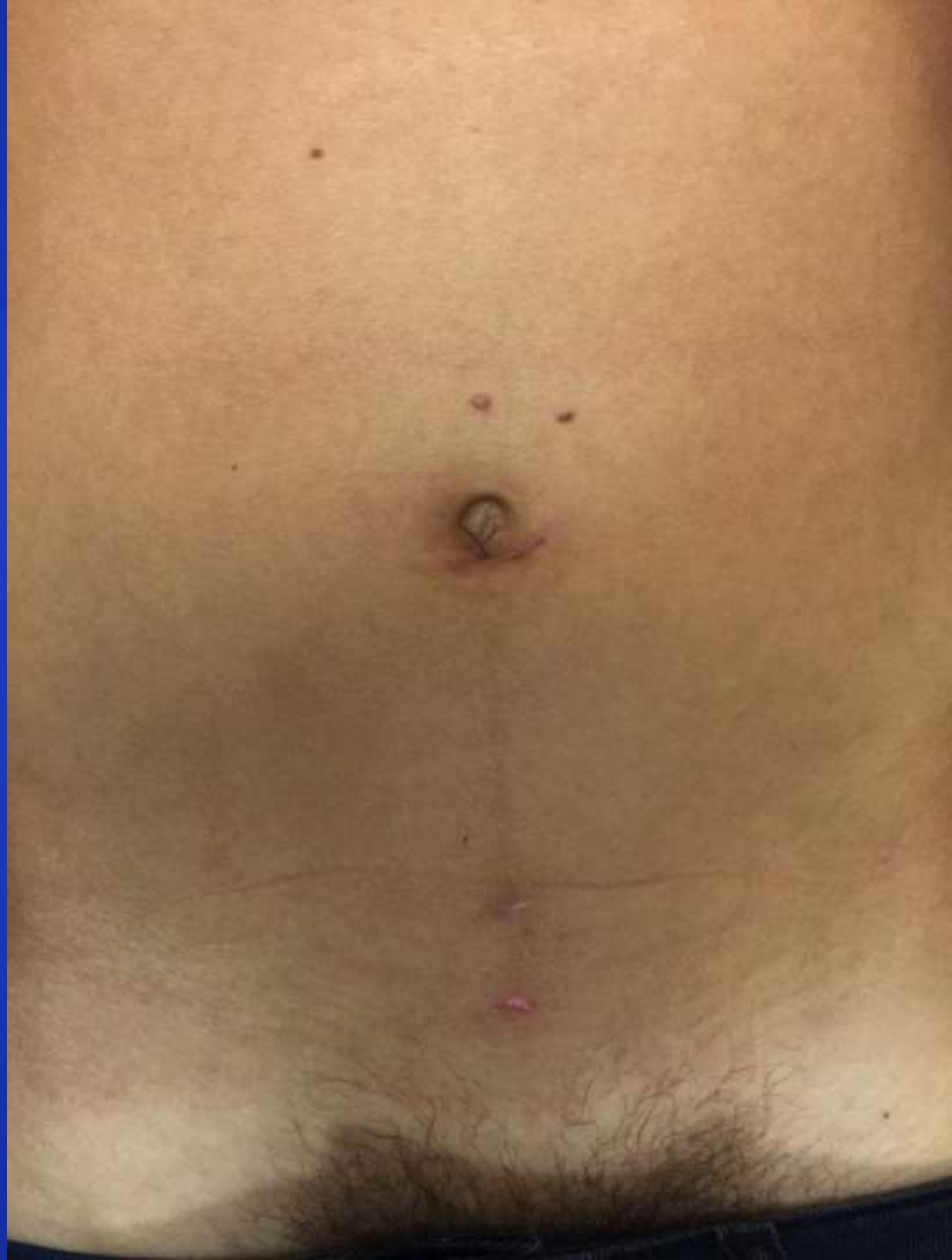
- There appears to be a quicker return to sporting activity after the TEP group as compared to the OMR group but this did not reach significance. There was no difference in post-operative pain.
- Study demonstrated that both were effective
- Overall leaning towards Lap TEP repair due to quicker return to sporting activity

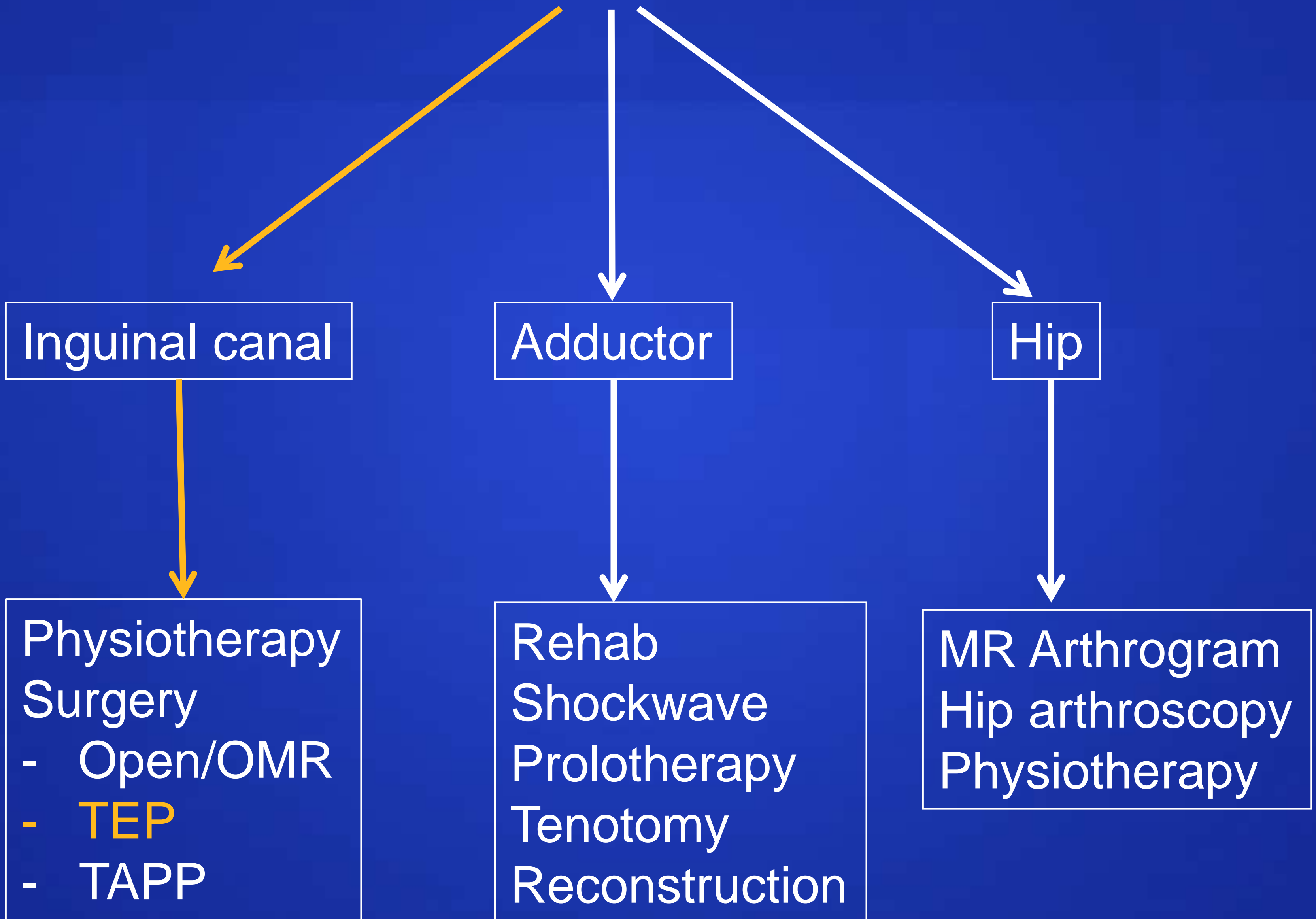
Business Use

Choice of Surgery

- Accepted that hernia surgery is technique driven
- Latest RCT comparing surgical techniques still is yet to recommend one treatment over another
- Is the answer:
  - A release of 'tension'
  - Reinforcement of the inguinal canal
    - Suture or Mesh
    - Minimal access or Open

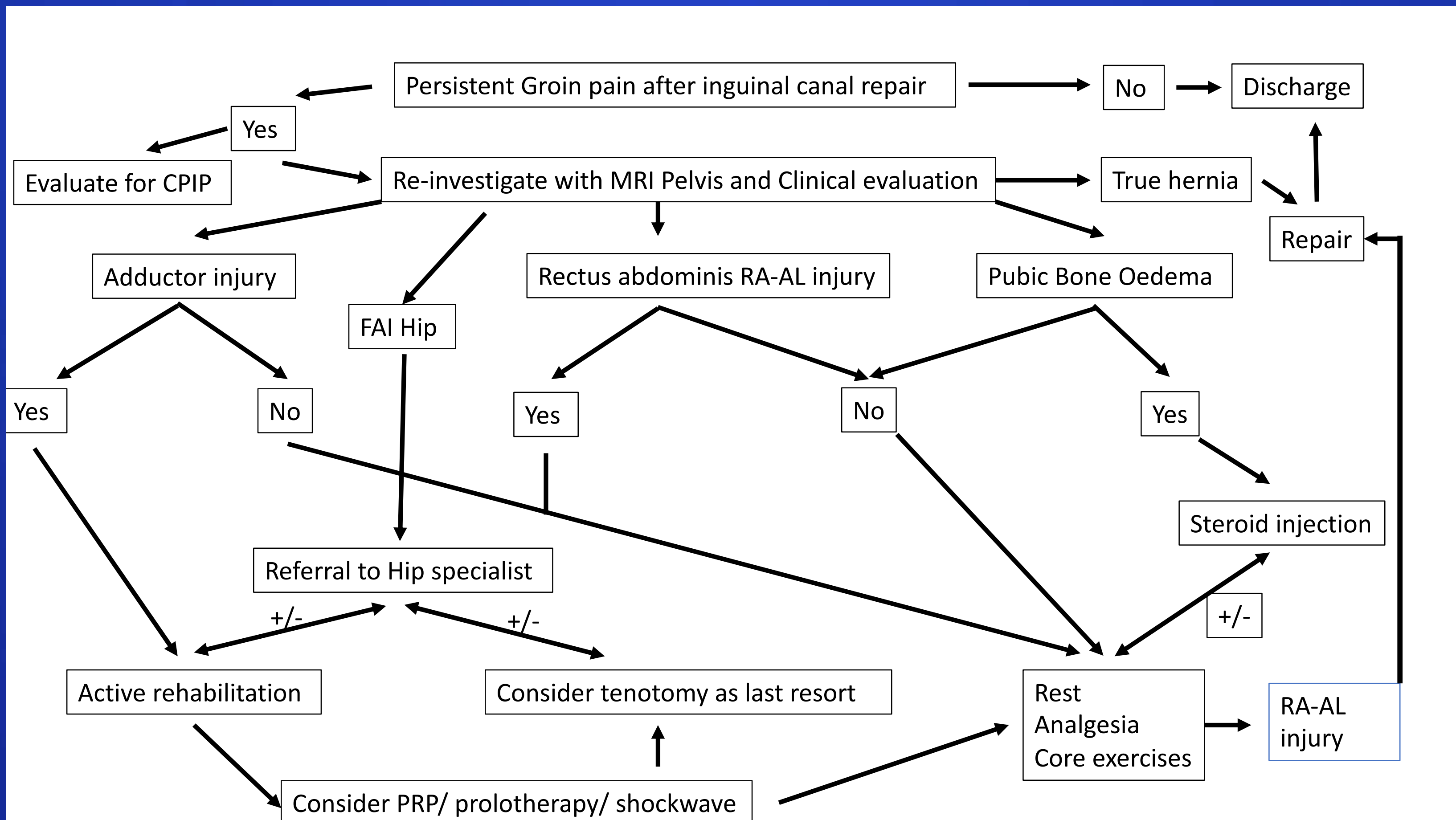
Business Use





Business Use

Algorithm for persistent pain



Sheen Paajanen grOin Recommended Treatment "SPoRT" score

SPoRT Score Calculator

1. This is the first study to propose a prognostic scoring system for predicting surgical intervention or physiotherapy for patients with inguinal disruption
2. Nevertheless, prospective external multi-centre validation is required before clinical use
3. Proof-of-concept, mobile deployment of the scoring system

8:29
Reset Calculator

MRI Features

Rectus Origin Injury

Labral Tear

USS Features

Femoral Hernia

Pain on Pubic Bone

Clinical Features

Total SPoRT Score: -1
P (Surgery): 0.006

Prediction: Physiotherapy

8:29
Calculator Selector Done

MRI Features

2 out of 4 selected

Adductor Tendinopathy/injury

Rectus Origin Injury

Rectus Abductor Aponeurotic Tear

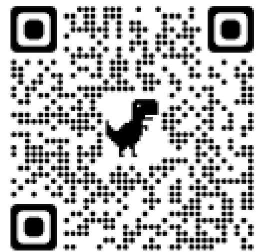
PLAC Abnor

Labral Tear

Osteitis Pub

Bone Oeder

FAI



Accepted for publication in Hernia 2023

Scores

USS Findings		
	Hernia	2
	Femoral Hernia	2
	Lipoma of Cord	2
	Posterior Wall Weakness	2
	Pain on Pubic Bone	1
	No Findings	0

MRI Findings		Score
	Adductor Tendinopathy/injury	-2
	Rectus Origin Injury	-2
	Rectus Abductor Aponeurotic Tear	-2
	PLAC Abnormality	-2
	Labral Tear	-2
	Osteitis Pubis	-1
	Bone Oedema	-1
	FAI	-1
	No Findings	0

Clinical Findings		
	Groin Defect of External Ring	2
	Groin Hernia	1
	Pain on Twisting or Turning	1
	Pain on Running	1
	Pain on Coughing or Sneezing	1
	Pain on Sit Ups	1
	Pubic Bone Pain	-1
	No Findings	0

Business Use

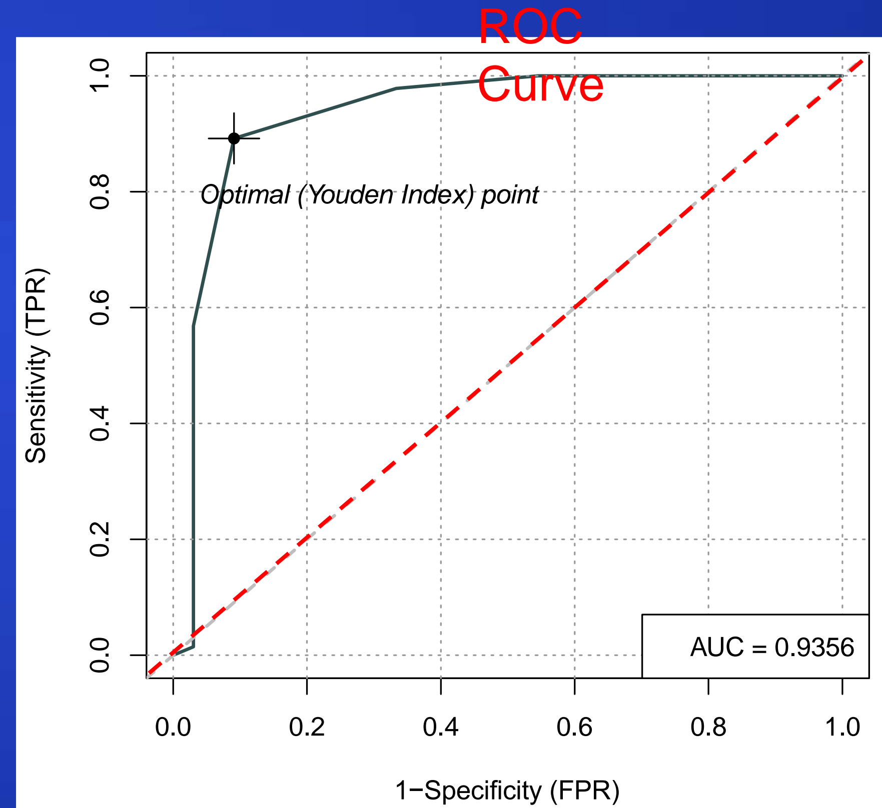
Results – SPoRT score performance

1. An optimal cut off of

< 0 for physiotherapy and

≥ 1 for surgery was established

1. Accuracy = 89.53% (95% CI = 83.97 – 93.68)
2. Sensitivity = 0.909 (95% CI = 0.757 – 0.981)
3. Specificity = 0.892 (95% CI = 0.828 – 0.938)
4. AUC = 0.936 (95% CI = 0.874 – 0.997)



Conclusion

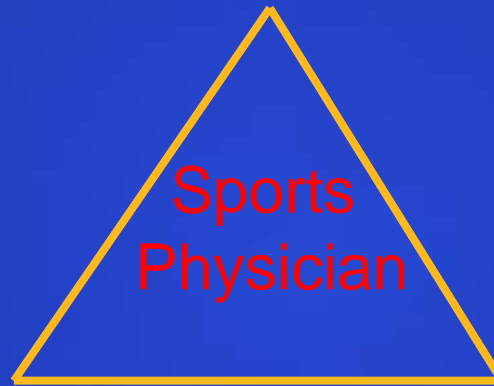
- Lap surgery – appears to show more anatomy
- Inspection of the groin more detailed
- Nerves can be better preserved
- Bilateral easier – reduced scarring and quicker return to play
- Chronic pain less of an issue with lap over open

- SPoRT score system appears to work well

Business Use

Chartered Physiotherapist

Hernia Surgeon



Hip Surgeon

MSK Radiologist

Do a biathlon 16 days after an operation? Yes, it can be done!

15 May 2018

Jem Blok, 47-year-old father of four, lives in Reigate and had a hernia operation on November 2, 2017 at Spire Gatwick Park Hospital by consultant Mr Paras Jethwa, specialist in laparoscopic and open hernia repair surgery.

"I have always been relatively sporty. I am a keen golfer and have also run several London marathons – it's something I do when I get bored and need a goal to work towards. In the last 18 months, I decided to do triathlons to give me a bit more variety in training. It's a great contrast to my day job as a financial adviser as I am often just sat in my car or at my desk.

I joined Tri Surrey, a local and very sociable triathlon club, and have been in friendly competition with my brother-in-law, who is 11 years younger than me. But I then developed a hernia. For the first six months, it wasn't causing me any trouble, but just looked a bit unsightly. Then, it became painful and I couldn't exercise so easily. It put a stop to the triathlons which was very frustrating. Even bending to put my shoes on hurt and I couldn't help to lift things around the house.

So, I decided to have keyhole surgery. After the operation, there was a little bit of discomfort around the tummy for the first week or so, but after 10 days I suddenly felt a whole lot better. It was then I got a message from my goddaughter to say do I want to take part in the Eton Dorney duathlon in six days' time. I really wanted to do it as I hadn't done one for a while because of the hernia, and I wanted to get one last one in before the end of the year.

Useful links

- All articles
- Next
- Previous

Consultants:

Mr Paras Jethwa

Treatments:

General surgery

When can I exercise?

Light duties day one +
Exercise bike
Swim
Row/X trainer

Back to normal weeks 3/4

Business Use

Two days
No sleep
Minimal food
Wet
Shot at

2 mile cross country

80 kg stretcher carry