Unexplained Lower Abdominal Pain?

Unexplained Groin Pain?

Unexplained Pelvic Pain?

Unexplained Dyspareunia?

Unexplained inguinal pain and tenderness suggesting incarcerated hernia (especially in obese patients) but without clinical symptoms and without palpable mass?

Typical physical findings of acute appendicitis or sigmoid diverticulitis but symptoms and lab findings do not correlate?

Patient with diagnosis of Sportsman (occult) hernia.

Unexplained tenesmus with no other cause detected?

Chronic and persistent prostatic tenderness?

Pain over inguinal scar and/or over pubic bone 4-6 weeks after inguinal hernia repair?

Osteitis Pubis

Periosteitis Pubis

Symph….

Urologist

General Surgeons

POPSS Syndrome

Orthopedist

Internist & Family Practitioner

Sports Med. Pain Clinics

Gynecologist

POPSS Syndrome (Periosteitis Pubis)

- Pain over pubis and/or surrounding structures associated with tenderness over pubic bone
- Common (but overlooked) etiology of lower abdominal pain.
- Periosteitis pubis or osteitis pubis as described by authors in the past is not an uncommon condition. Several reasons are attributed to the diagnosis being overlooked.

The term osteitis pubis does sidetrack the primary care physicians and general surgeons thinking that the disease is related to the bone.

The advanced full blown clinical picture described by the urologists (who made this disease popular) as a complication of open prostatectomies has been imprinted in the minds of clinicians. This advanced clinical picture is rarely seen nowadays. Milder forms of the disease with slightly different manifestations are commonly seen.

The disease complex is better described as a syndrome and thus the name POPSS Syndrome was coined. The syndrome consists of pain over one or several of the following structures:

The omission of exam of pubic bone on physical exam of abdomen (specifically in patients with lower abdominal pain) is the most embarrassing cause of missed diagnosis.

In medical schools, residence programs and also in the textbooks of physical diagnosis, stress is not placed on examination of pubic symphysis during abdominal examination.

i. Pubic bone (tubercle and/or crest)
ii. Lower abdomen (right lower quadrant, left lower quadrant, and suprapubic)
iii. Inguinal ligament
iv. Medial aspect of thighs
v. Perineum including vagina and rectum (dyspareunia and tenesemus)
vi. Scrotum and testis
vii. Prostate
viii. Anterior superior iliac spines

Majority of cases the patients do not complain of pain over the pubic bone.

The most important clinical finding for the patient to be considered under this syndrome is the tenderness over pubic bone (i.e. symphysis and pubic tubercle) on external exam and in tenderness of posterior aspect of pubic bone on vaginal or rectal exam.

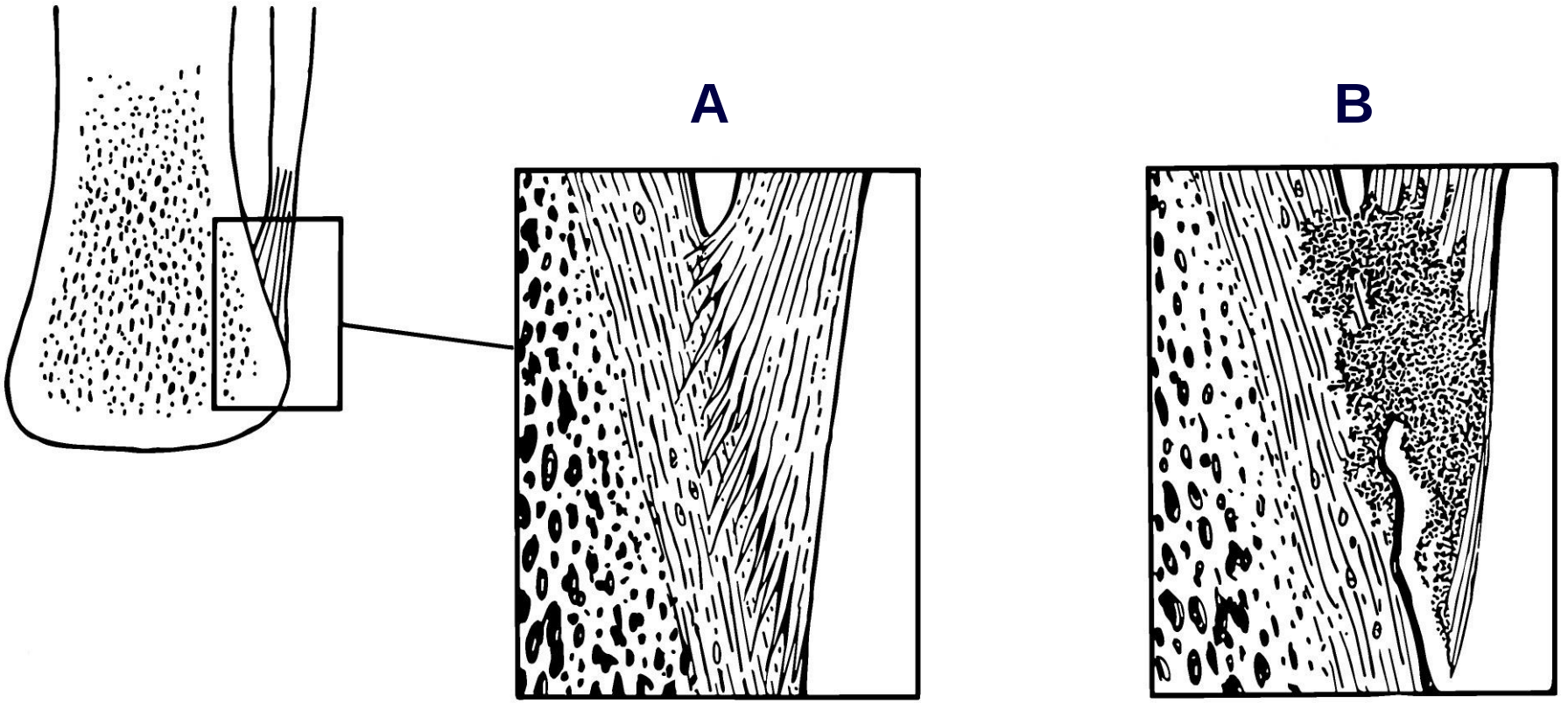
- Other serious causes of lower abdominal pain should be ruled out before making diagnosis of “POPSS Syndrome”.
- Detecting other infective process in the vicinity does not necessarily rule out “POPSS Syndrome” because both these conditions can co-exist.
- Asymptomatic patients with tenderness of pubic bone should not be included under this syndrome.

- This disease was first described in 1923 by Dr. Leaueu and Rochet and in 1925 by Beer.
- For several years urologists were interested in this problem and several reports appeared in urology journals. Subsequently, orthopedists, radiologists, gynecologists got interested.
- Exact etiology is not known at this time
- Several different etiology factors are mentioned in the literature: infection, impaired circulation, venous congestion but the mot convincing etiological factor seems to be enthesopthy.

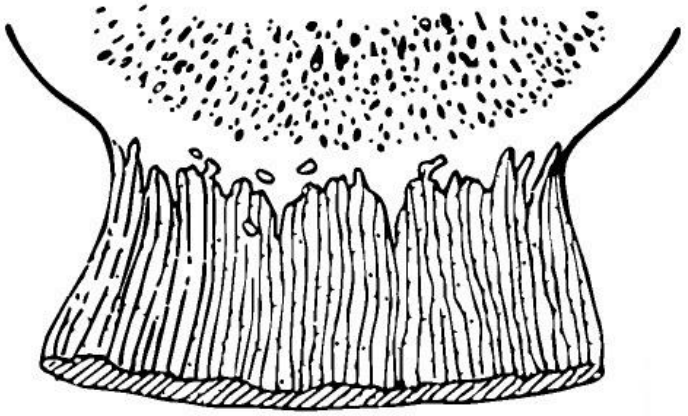
The Anatomical Characteristics of the Enthesis as a Defined Structure

1. The attachment portion of the tendon.
2. The attachment portion of the bone which is not covered by the periosteum.
3. Interposed hyaline cartilage.
4. Peritenon which passes into the perichondrium and periosteum.
5. Additional structures such as bursae, fibrous tissue, adipose tissue cushions and sesamoid bones. Enthesopathy is a disease process occurring as these sites. It may be inflammatory, degenerative, endocrine, metabolic or traumatic.

- The enthesis has a very active metabolism (Ball, 1971). There is an abundant nerve supply to the attachment portion of the tendon, composed of various types of nerve endings.
- During movement entheses are exposed to immense mechanical loads. Endurance of these repeated loads cannot be explained solely on the basis of physical and chemical laws governing inanimate matter.



Inflammatory enthesopathy of the tendon attachment, demonstrating a normal patient (a) and the changes that occur with inflammatory enthesopathy (b).



Degenerative enthesopathy of the tendon attachment. The developing enthesophytes may be smooth or irregular but are usually well marginated.

Classification

ACUTE (either first time or as acute exacerbation of chronic)

1. Presenting as acute abdomen
2. Presenting as incarcerated inguinal or femoral hernia
3. Painful or restricted ambulation because of severe pain

CHRONIC

1. Stage I: Pain confined to pubic bone
2. Stage II:
   A. Pain confined to the muscles in R L Q suprapubic, L L Q and/or medial half of inguinal ligament
   B. Pain confined to the muscles in the vicinity of ant. sup. Iliac spines and/or lateral half of the inguinal ligament
   C. Pain confined to the structures attached to the posterior aspect of pubic bone, i.e. prostatic pain, dyspareunia, tenesmus, etc.
3. Stage III: Combination of any two of Stage II
4. Stage IV: Combination of A, B, and C in Stage II

Diagnostic Clues

Strong Suspicion

In all patients with lower abdominal pain consider "POPSS Syndrome" in differential diagnosis.

History:

1. Lower abdominal pain with radiation to the pubis, radiation to the medial aspect of the thigh, and/or the scrotum.
2. Several of the patients have history of arthritis or enthesopathy of joints elsewhere in the body.
3. Unexplained dyspareunia, especially when present after hysterectomy and bilateral salpingo-oophorectomy.
4. Recurrent prostatitis.

PhysicalExam:

1. On abdominal exam: tenderness over pubic symphysis and/or pubic tubercle.
2. On vaginal exam: positive “hook sign” (i.e. tenderness over posterior aspect of pubic bone and/or superior crest of the pubic bone with reproduction of the pain the patient is experiencing.)
3. On rectal exam: positive paraprostatic sign (i.e. tenderness lateral to the prostate gland either over the posterior aspect of the pubic bone or over the inferior ramus of the pubic bone.)
4. Spermatic cord traction sign: eliciting pain on downward traction of the spermatic cord with absence of tenderness in the cord, testis or epidydimis.

OLD DICTUM

- Abdominal exam is not complete without doing Rectal and Vaginal (pelvic) exam.

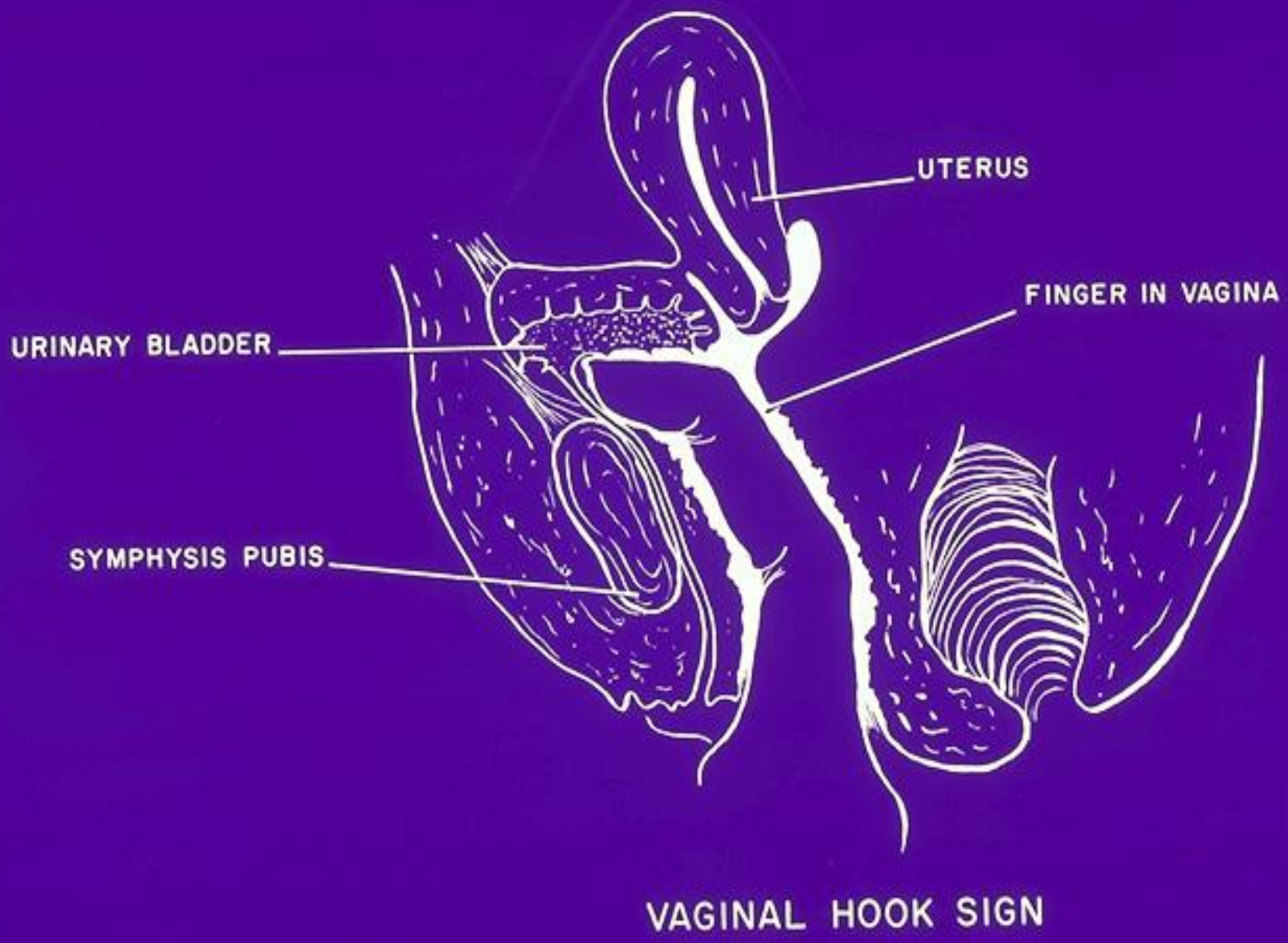
NEW DICTUM

- Abdominal exam is not complete without doing Rectal and Vaginal (pelvic) exam and also without examining adjacent bony structures i.e. pelvic bone (pubic bone and ASIS) and lower ribs.

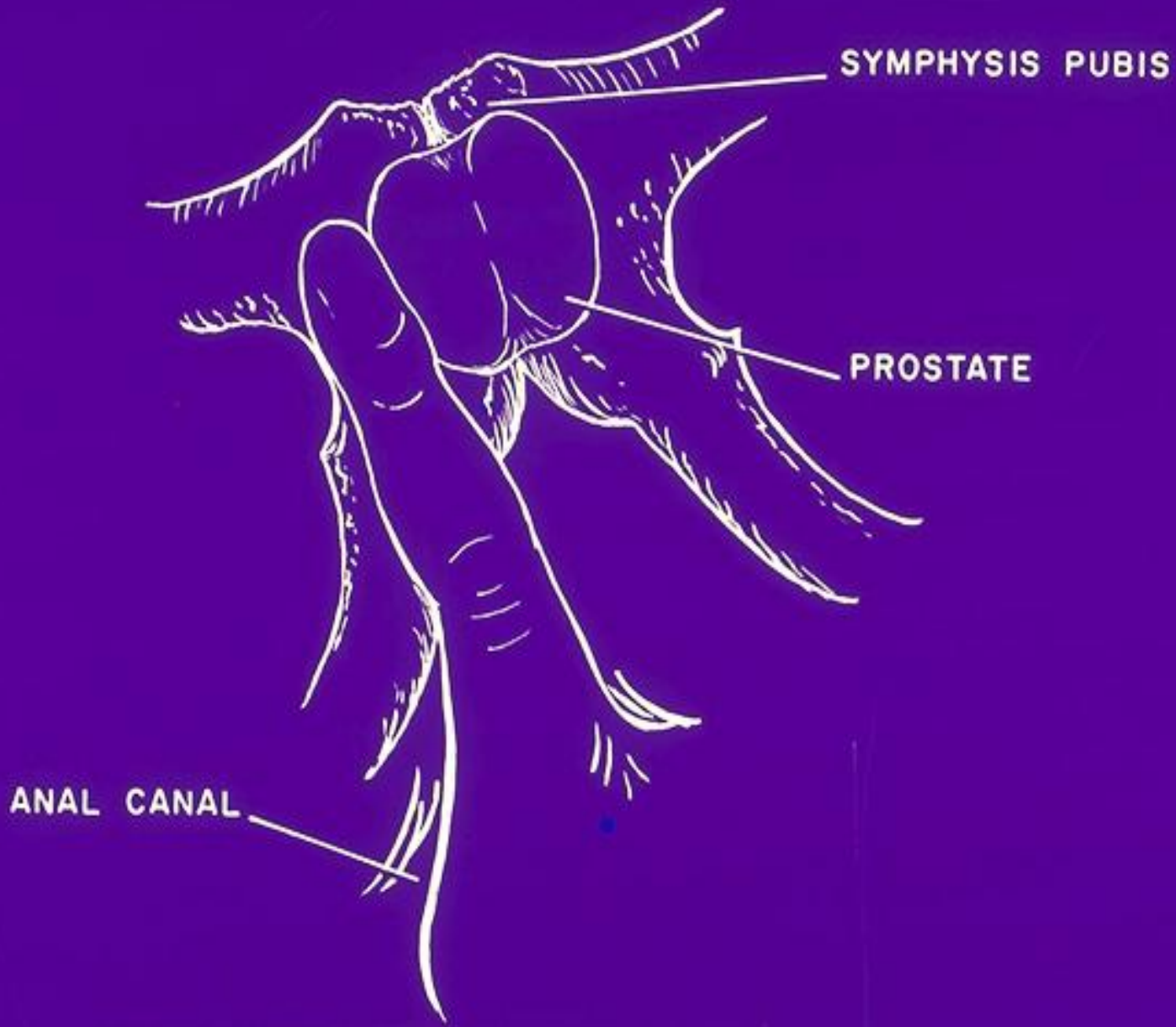
- Vaginal (pelvic) exam is not complete unless vaginal hook sign is performed.

RECTUS FLEXION SIGN

SACROILIAC SIGN



VAGINAL HOOK SIGN



PARA-PROSTATIC RECTAL SIGN

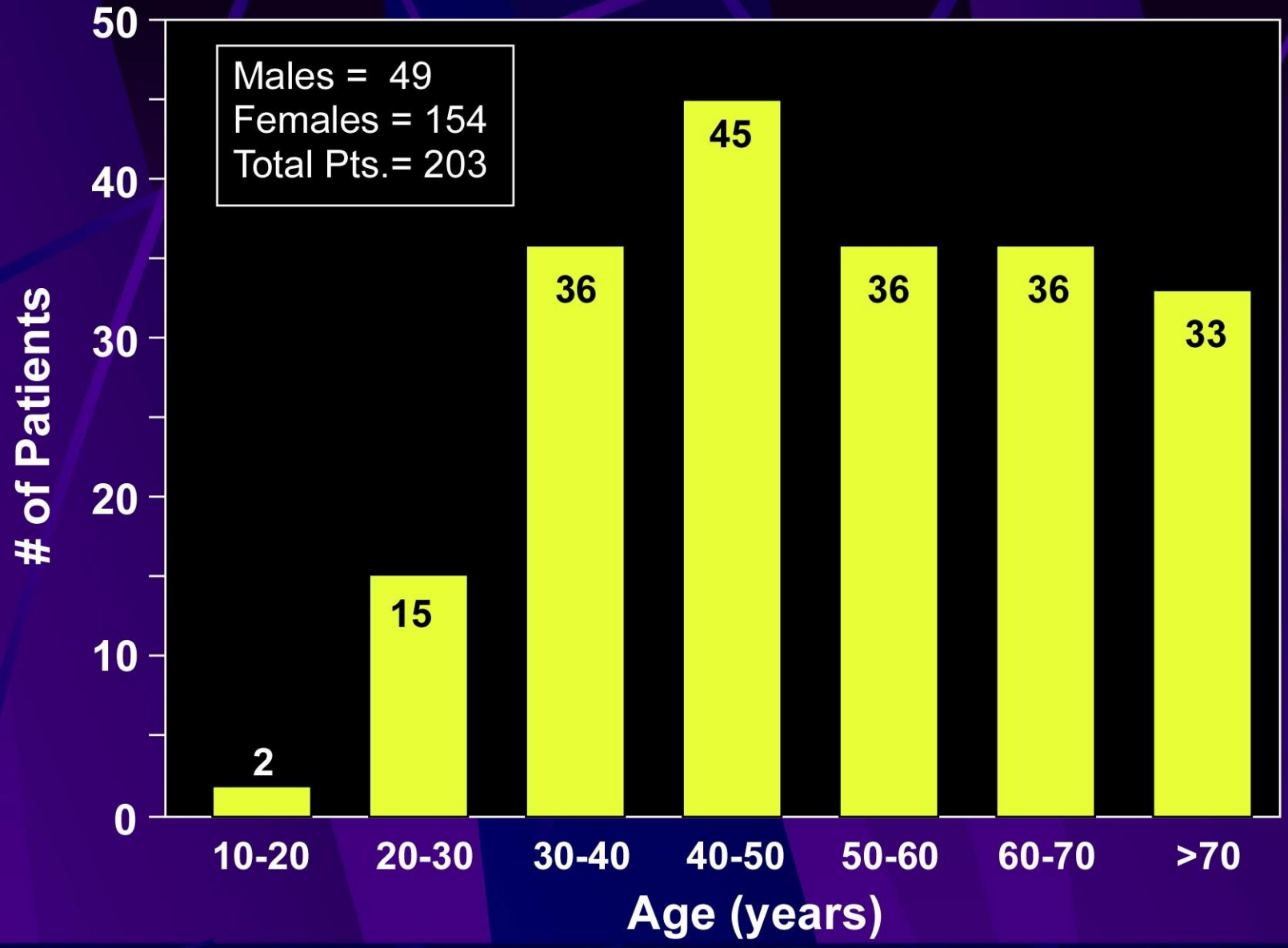
SPERMATIC CORD
TRACTION SIGN

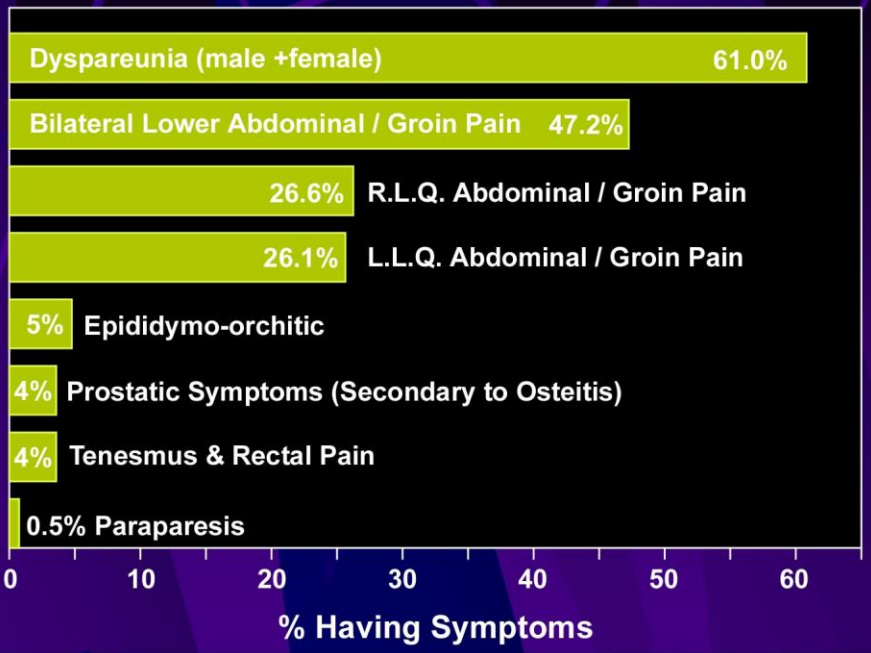
Confirmation of “POPSS”

- If nearly 40% to 50% of the pain and muscle spasm disappears within 3 to 4 days after injection of marcaine (5 to 8 cc of 0.5%) with depo-medrol® 40mg, the diagnosis of “POPSS Syndrome” can be confirmed.
- If the pain is not relieved, then one should look for another pathology.

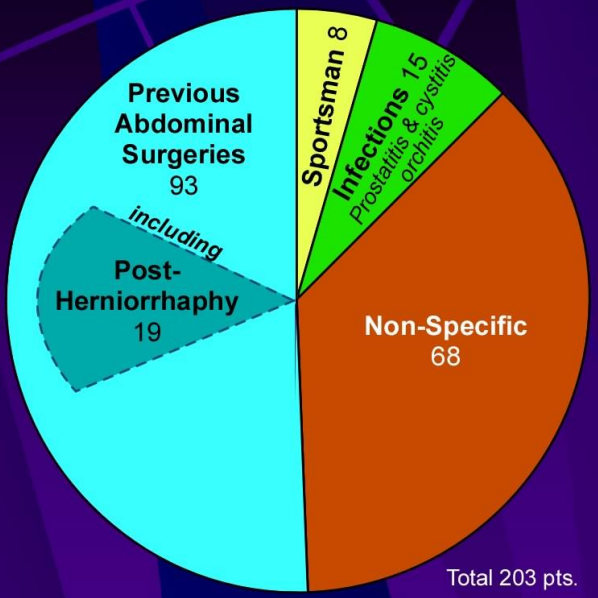
Laboratory & X-Rays

They are not of much help in diagnosis of this condition. Only six patients in our series had clinical x-ray findings.


Males = 49
Females = 154
Total Pts.= 203
# of Patients
50
40
30
20
10
0
2
15
36
45
36
36
33
10-20
20-30
30-40
40-50
50-60
60-70
>70
Age (years)


Dyspareunia (male +female) 61.0%
Bilateral Lower Abdominal / Groin Pain 47.2%
26.6% R.L.Q. Abdominal / Groin Pain
26.1% L.L.Q. Abdominal / Groin Pain
5% Epididymo-orchitic
4% Prostatic Symptoms (Secondary to Osteitis)
4% Tenesmus & Rectal Pain
0.5% Paraparesis
0
10
20
30
40
50
60
% Having Symptoms

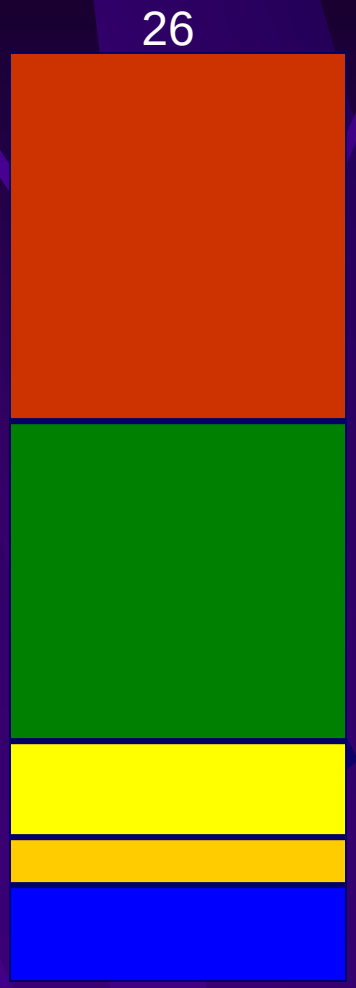

SKYLINE
MEDICAL
CENTER


Previous Abdominal Surgeries 93
including
Post-Herniorrhaphy 19
Sportsman 8
Infections 15
Prostatitis & cystitis
orchitis
Non-Specific 68
Total 203 pts.


SKYLINE MEDICAL CENTER

In Non-Surgical Patients the Following Pathology Was Detected

No Obvious Infection	11
Prostatitis	8
Urethritis	3
Passage of Recent Renal Stone	1
Epididymorchitis	3



Bacterial Prostatitis

Funiculitis or Epidydimorchitis

can cause

POPSS SYNDROME

can mimic

Prostatitis

Funiculitis Epidydmorchitis

Associated Disease

Seventeen of the 70 patients had a history of arthritis (or enthesiopathy)

Referred Pain

1. One patient had severe excruciating pain in both lower extremities and had paraparesis. Myelogram done to rule out spinal cord tumor was normal.
2. Fourteen patients had pain referred to scrotum.
3. Pain referred to medial aspect of one or both thighs was present in thirty-four patients.

Lab and X-Ray Results

- WBC and sedimentation rates were normal in the majority of patients.
- X-rays of the pubic bone in 60 of the patients revealed only 8 with classical findings of osteitis pubis.

Treatment

1. Local heat, ultrasound, etc.
2. Non-steroidal anti-inflammatory agents
   A. MOTRIN
   B. Naprosyn
3. Oral corticosteroids (I.e. Prednisone)
4. Local injection of Marcaine & DEPO-MEDROL
5. T.E.N.S. units

For the past 3 years we have used local steroids in the majority of the patients. Marcaine 0.5% 4 to 6 cc + DEPO-MEDROL 40 mg ½ to 1 cc is injected at one or all of the following sites:

A. Pubic tubercle
B. Pubic crest (or symphysis)
C. Ant. Superior iliac spine

MOTRIN or Naprosyn is still used in patients who refused local injections, or concomitantly with steroid injections and for recurrences.

Recently, steroids have been used sparingly either in form of injection or orally.

- 35 patients had DEPO-MEDROL and Marcaine injection locally
- 24 patients had a short course of oral prednisone

Sixty-three of the 70 patients were followed from 7 years to a few months. Only 9 patients of the 63 had only one attack. Five patients had 2-3 attacks. The majority of the patients followed had recurrent attacks recurring every 2-12 months.

Results

Patients not responding to MOTRIN or Butazolidin were given corticosteroids either by injection of DEPO-MEDROL locally or orally as prednisone tablets. In three patients, injection of steroids (or course of prednisone) had to be repeated for that particular attack.

COMMENTS

- Do you mean I don't need expensive tests and endoscopies to make diagnosis?
- Do you mean I can get rid of my pain with 2 or 3 steroid shots? Are you sure I don't need surgery?

IT IS TO GOOD TO BE TRUE!

IS IT VOO-DOO MEDICINE?

- You saved my marriage.
- It is like Honeymoon all over again.

Conclusion

1. Pubic bones and anterior superior iliac spines should be carefully examined in all patients with lower abdominal pain.
2. POPSS Syndrome should be considered as a differential diagnosis in all patients with lower abdominal pain.

Conclusion

3. Always rule out other serious conditions before making final diagnosis of POPSS Syndrome.
4. POPSS Syndrome may be associated with other underlying pathology (i.e. prostatitis, ovarian cyst, etc.)
5. Detecting other infective process in the vicinity does not rule out POPSS Syndrome because both these conditions can co-exist.

Conclusion

6. Etiology of POPSS Syndrome is not known. However, several cases can be explained as enthesopathy.

7. It is a recurring condition with no definite cure available at this time. Corticosteroids seem to help the majority of patients.