Audit: Testicular pain: testicular torsion

SATH

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Objectives of Audit

- To review management within SATH, of all boys aged 0-16, referred as “Testicular Torsion” in order to establish if both local & national standards are being achieved, including the referral pathway.

Background

- Local Acute Scrotum :- Definition & Differentials
- Epidemiology
- Current Guidelines on Management of Torsion
- SaTH Audit

What is an ‘Acute Scrotum?’

“Pain of the scrotum and/or its contents” - Urological emergency!

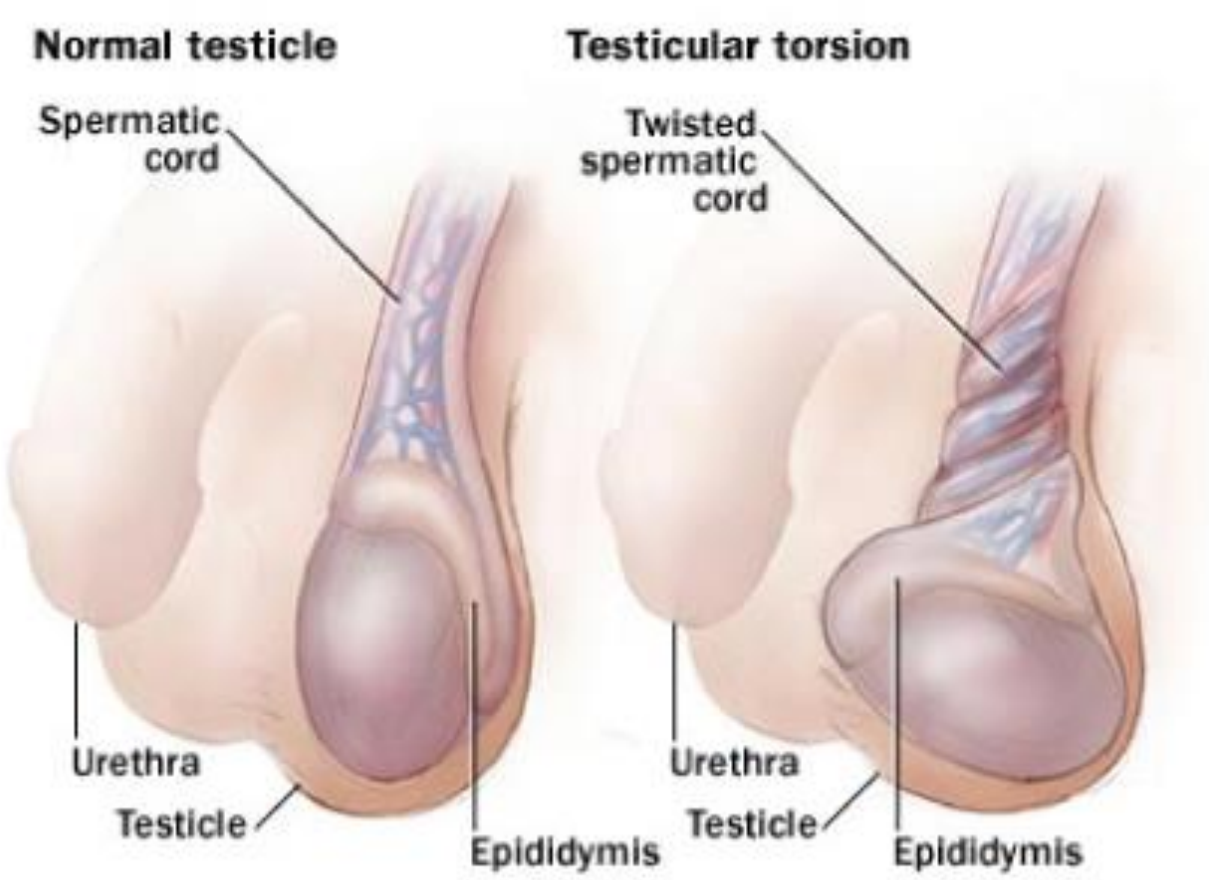
Most commonly caused by :

1. Testicular Torsion
2. Torsion appendix testis
3. Epididymitis/Epididymo-orchitis

- Other causes include:-
  - *Hydrocele*
  - *Mumps orchitis*
  - *Incarcerated hernia*
  - *Systemic disease e.g. HSP.*

What is Testicular Torsion?

- Twisting of the spermatic cord, reducing blood supply to the testicle causing ischaemia & eventually infarction of the testicle.
- Intravaginal torsion = Due to lack of normal fixation of post. aspect of testis to the tunica vaginalis. This results in the testis being free to rotate within the tunica vaginalis aka ‘Bell Clapper Deformity’.
- **Bilateral in 40% of cases.**



Epidemiology :- Torsion

- Annual incidence 3.8 per 100,000 males <18YO
- 75% of cases of Torsion occur in the paediatric population.
- Bimodal age distribution :- 1st year of life & early adolescence.
- Accounts for approx 1/3 ‘acute scrotum’ cases.

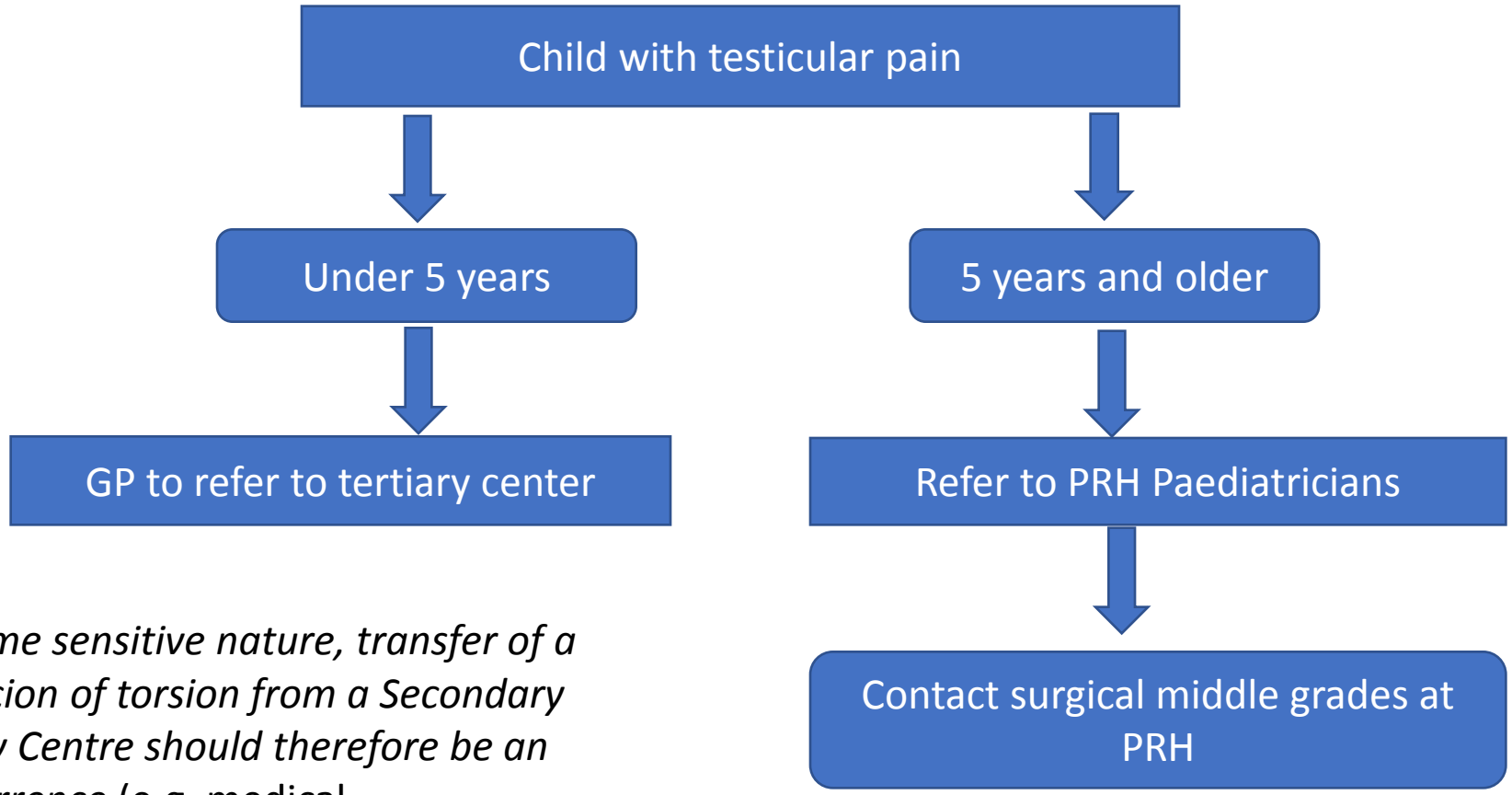
Why the urgency?

- Immediate = Infarction -> Atrophy within 4-6hrs -> Sepsis
- Short term = Abscess formation, Chronic Epididymitis
- Long term = Reduced fertility in 40% [even if successful testicular salvage due to free radical exposure].

What do the guidelines say?

	European Society for Paediatric Urology	BMJ best practice recommendations
History & Examination	Absence of the cremasteric reflex is 100% sensitivity and 66% specificity for TT	
Investigations	In suspected torsion, imaging studies should NOT be performed as they may delay treatment. *Negative surgical exploration is preferable to a missed diagnosis as all imaging studies have a false-negative rate*	USS should not delay surgical exploration if testicular torsion is suspected.
Management	Surgical exploration is mandatory in all cases of TT within 24 h of symptom onset. And cases of in equivocal appendix testis torsion with persistent pain	If TT suspected, admit immediately to urology or paediatric surgery. Detorsion ASAP within 4 -8 hours
Follow up	Mainly for fertility issues, hormonal consequences and cancer. Testis should be assessed around 6 months.	Previous episodes of severe, self-limiting pain or swelling should be refer for an OPD urologist appt.

SATH: Current Referral pathway for children with suspected testicular torsion



BAPS = Due to time sensitive nature, transfer of a boy with a suspicion of torsion from a Secondary Care to a Tertiary Centre should therefore be an exceptional occurrence (e.g. medical comorbidities).

Purpose of Audit

- Boys < 16 years referred between January 2017 to January 2018 included in the audit
- In particular we wanted to know…

- Age of presentation
- Surgical Review within 1 hour?
- Final Diagnosis
- Investigations
- Management : Theatre, Antibiotics
- Length of stay in hospital
- Follow up plan
- Readmission

27 patients

24 seen in PRH
3 seen in RSH & transferred to PRH

Age of presentation

Age (Years)	No of patients	%
<1	1	4
1- 5	3	11
>5	23	85
Total	27	100

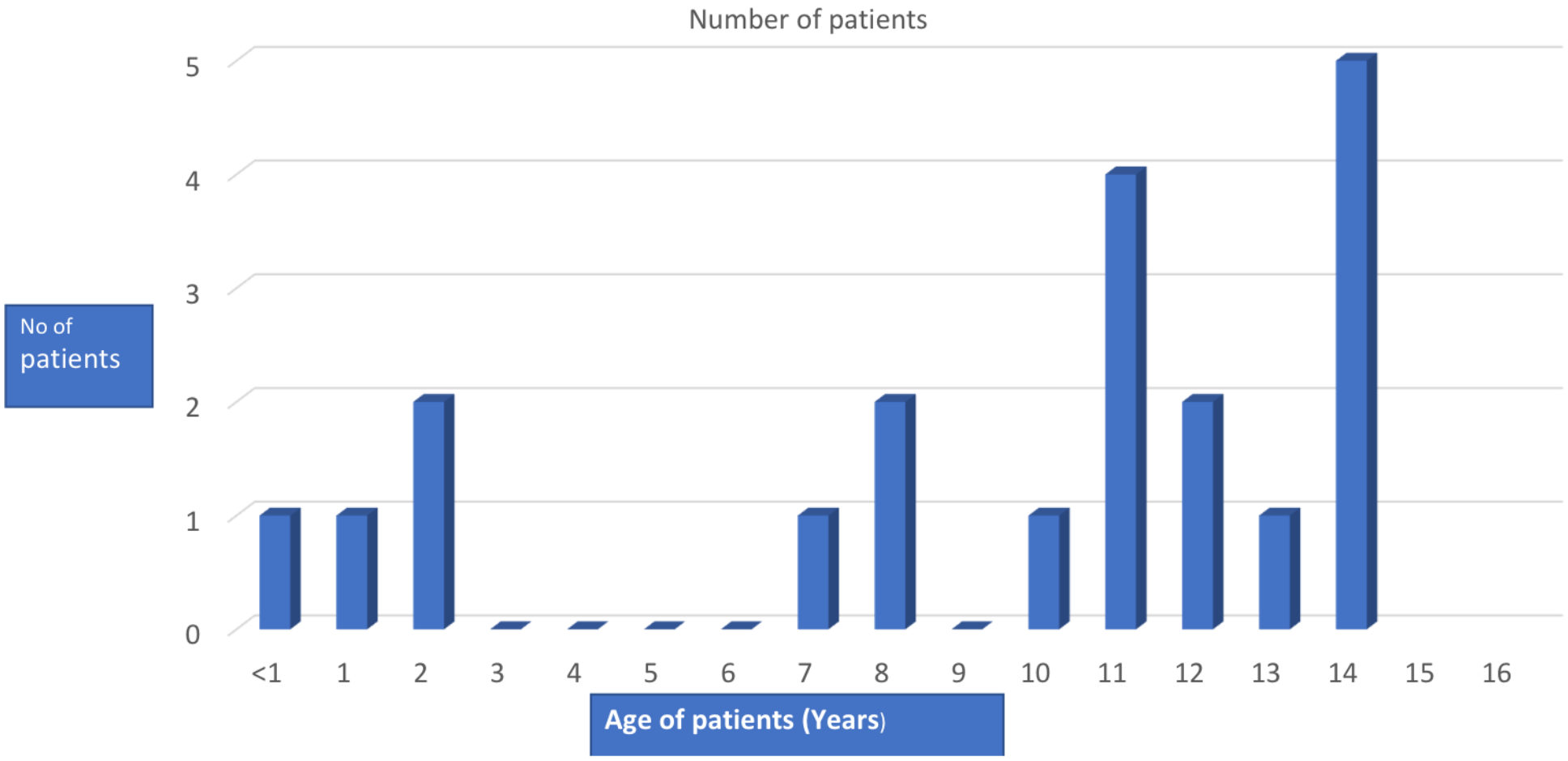
Mean = 11 YO

4 were < 5Yrs & therefore should be transferred to a tertiary center.

<u>However…</u>

- Only 1 was transferred to BCH [an 11 weeks old] with suspected TT.
- Other 3 were treated as epididymo-orchitis.

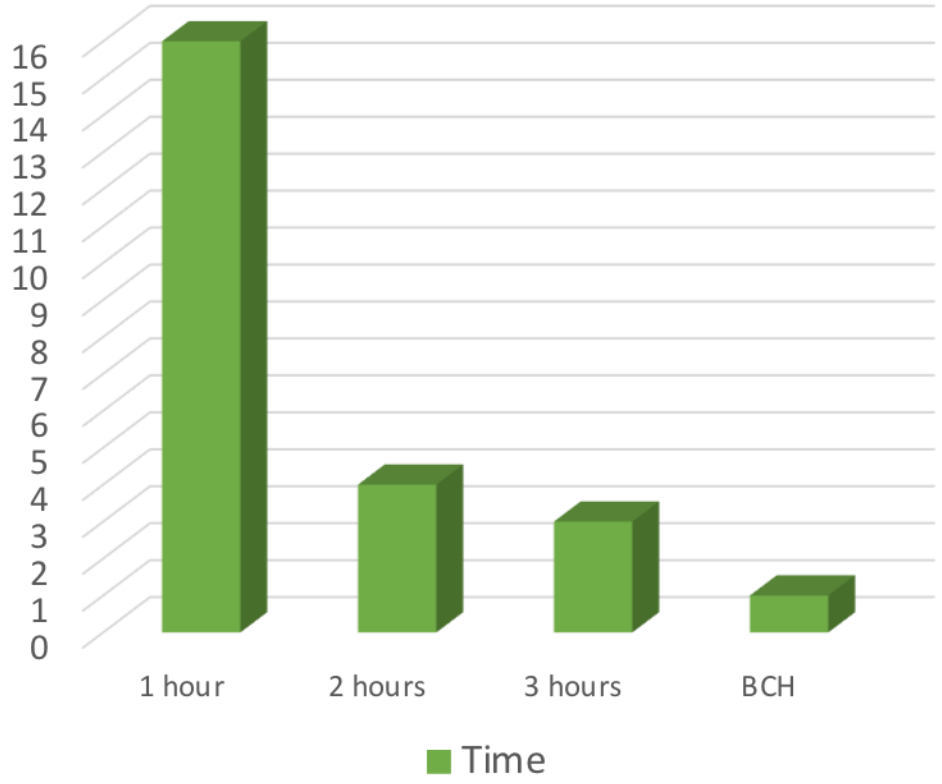
Age of presentation



Mean age of presentation: 11 years

Time seen by surgeons

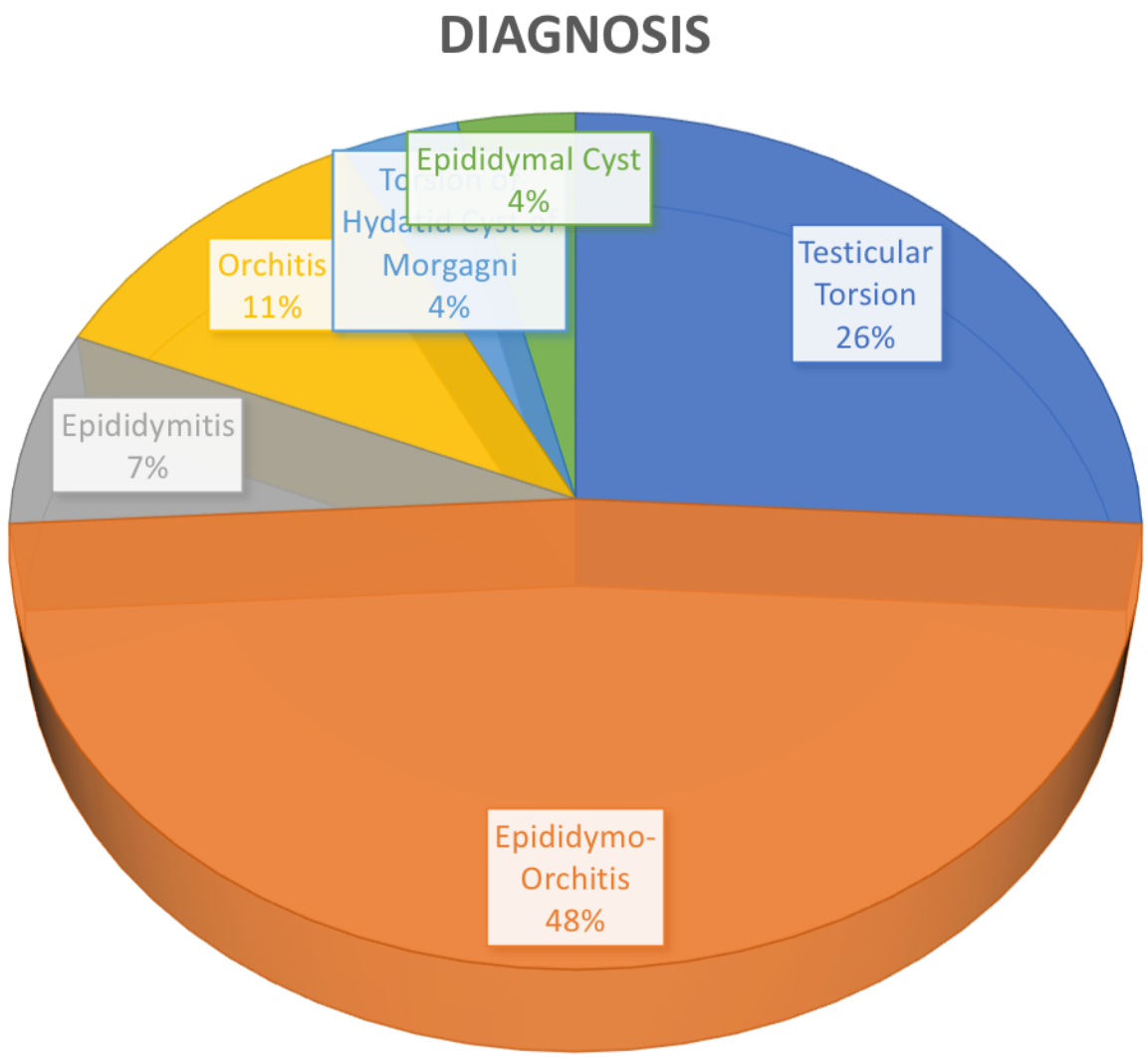
Time duration before seen by Surgeons (Hours)	Number of Patients	%
1	16	59%
2	4	15%
3	3	11%
Transferred to BCH	**1**	**4%**
Not Applicable	**3**	**11%**
Total	**27**	**100%**



Not Applicable: 3 of 27 patients referred as testicular torsion were diagnosed to have Epididymo-orchitis/orchitis and were not referred to the surgeons

Diagnosis

Diagnosis	No of Patients	%
Testicular Torsion	7	26
Torsion of Hydatid Cyst of Morgagni	1	4
Epididymo-orchitis	13	48
Epididymitis	2	7
Epididymal Cyst	1	4
Orchitis	3	11
Total	27	100



1 patient (11 weeks) with torsion was transferred to tertiary center (BCH)

Investigations

Investigation	No of pts	% of pts	Results
FBC, CRP	13	48%	2 raised inflammatory markers Others normal
Blood Culture	1	4%	Negative culture
Urine	17	63%	2 showed traces of protein, others were NAD
Ultrasound	15	56%	2 as out-patient. 1 showed epididymal cyst 1 confirmed Epididymitis 1 testicular torsion 1 showed swollen testicles. Others normal
Histology	2	7%	Evidence of torsion

To USS or not to USS?

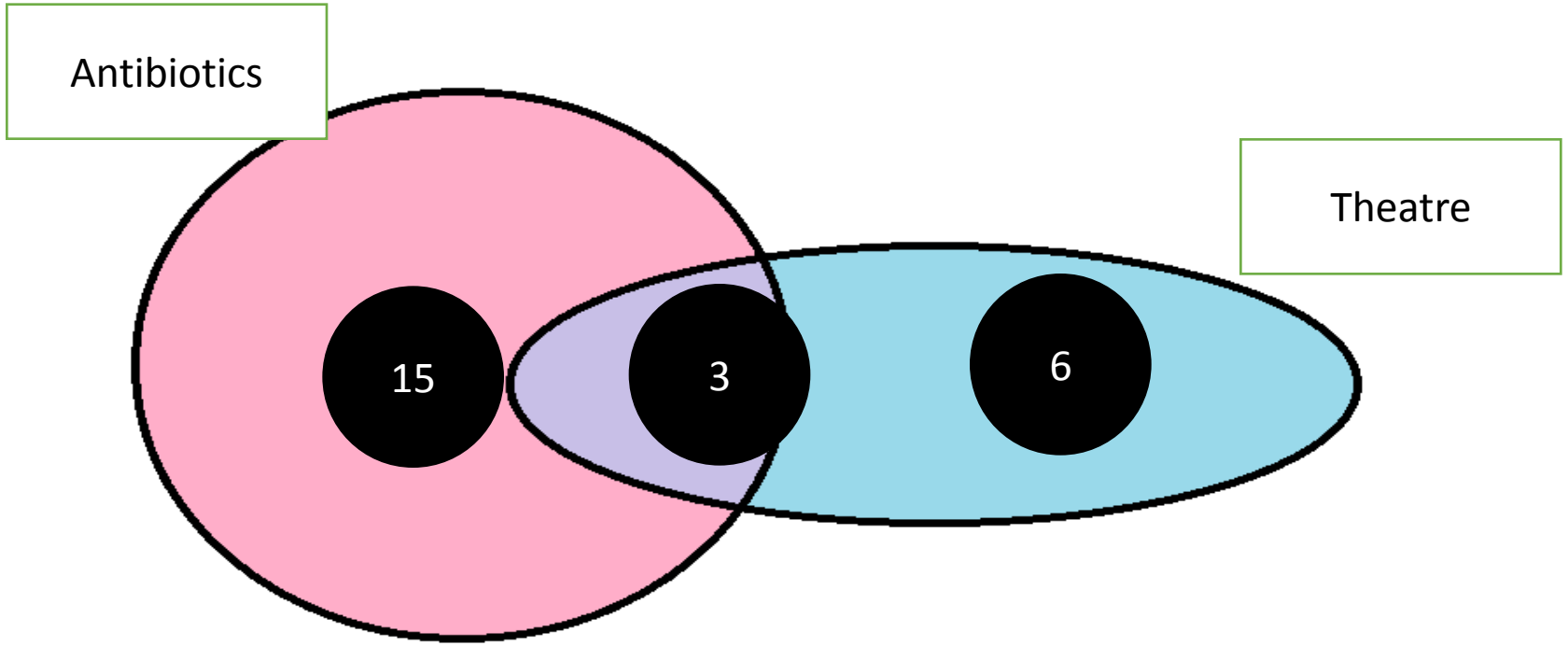
- **In patients with a history and physical examination suggestive of torsion, imaging studies should NOT be performed as they may delay treatment.**
- In this audit, only 1 out of 6 patients with testicular torsion seen in PRH had USS and this patient was initially thought to have infected hydrocele
- **This suggest that imaging studies DO NOT delay treatment in cases of testicular torsion seen in SATH**

Management

Management	No of patients	% pt
Theatre	9	33%
Antibiotics	18 - 16 = Co-Amoxiclav - 2 = Doxycycline & Ciprofloxacin	67%
Transferred to BCH	1	4%
Both theatre & Antibiotics	3	11%

1 patient had Torsion of Hydatid Cyst of Morgagni and was managed conservatively with analgesia

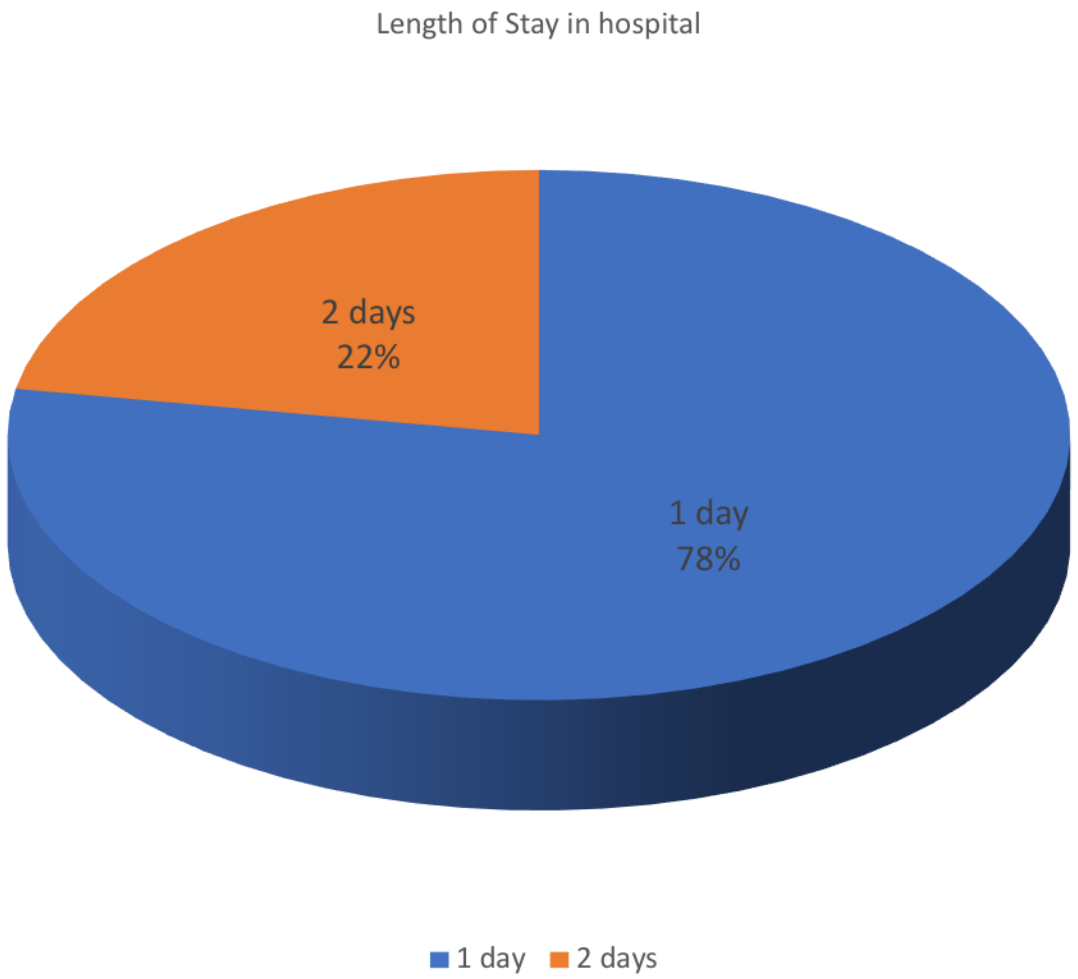
Management



6 out of 9 (67%) that went to theatre were confirmed to have testicular torsion
Histology done in 2 patients confirmed Testicular torsion

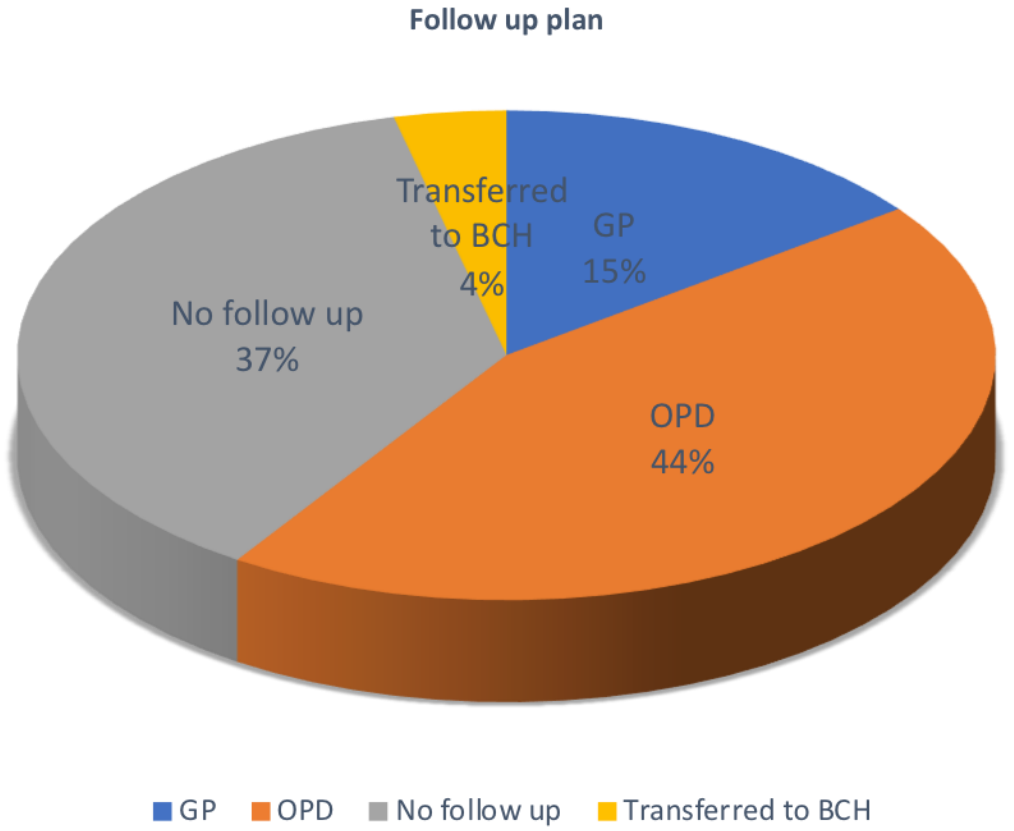
Length of Stay in Hospital

Length of Stay	No of Pts	% (Pt)
1 day	21	78
2 days	6	22
Total	27	100



Follow up

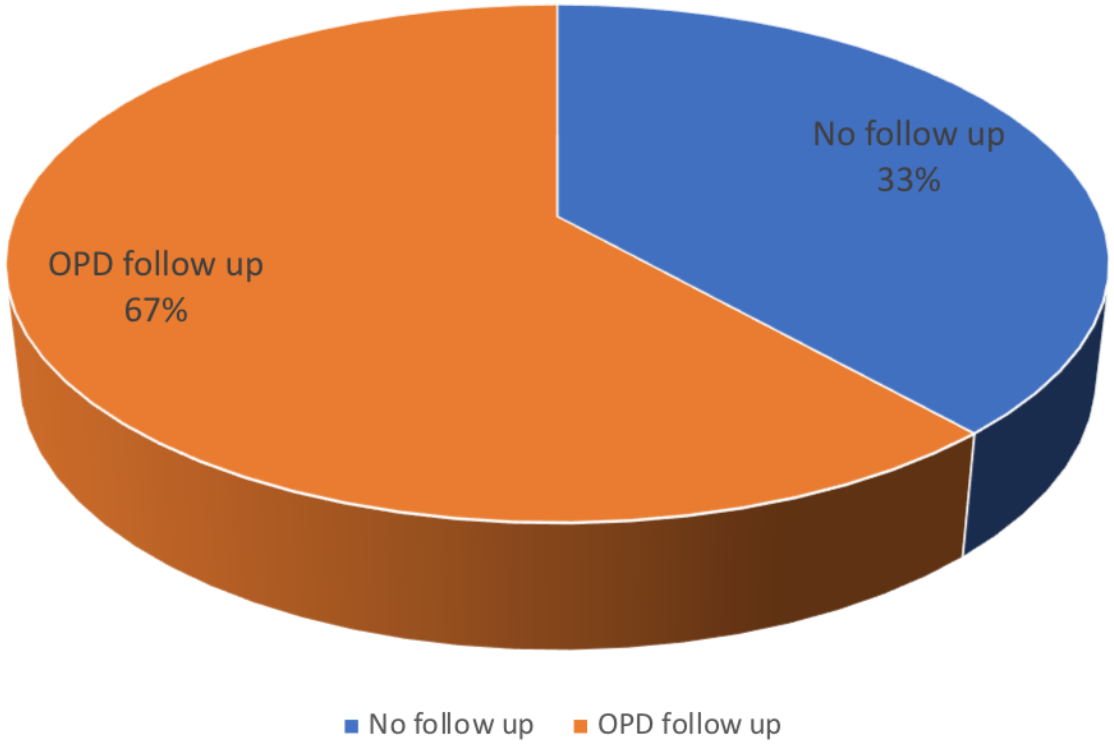
Follow up	No of Pts	%
No follow up	10	37
GP	4	15
OPD (urology/ general surgeon)	12	44
Transferred to BCH	1	4
Total	27	100%



Guidelines recommends follow up for all patient with testicular torsion

Follow up for patients with Testicular Torsion

- 4 out 6 (67%) patients with testicular torsion were followed up Urology OPD
- Guideline recommends follow up for patients with testicular torsion within 6 months.



Readmission

- 4 out of 27 (15%) patients were re-admissions
- 3 previously had testicular torsion, they were treated as epididymo-orchitis on readmission.
- 1 patient previously had epididymo-orchitis was treated as testicular torsion on readmission
- None of the reviewed patients with previous orchidectomy re-presented with torsion.

ESPU: Recurrence after orchidopexy is rare (4.5%) and may occur several years later.

Summary/ Findings

- Under 5 with testicular torsion were referred to BCH by Paediatric Team at PRH and not GP. It may be understandable for local hospital to review and confirm torsion before referral to tertiary center.
- Mean age of presentation is 11 years
- All patient with suspected torsion following review by Paediatric Team were seen by surgeons
- 59% of patients referred as torsion were reviewed by surgeons within 1 hour , 74% within 2 hours and 85% within 3 hours of presentation to the hospital
- Ultrasonography does not delay surgical exploration where testicular torsion is suspected.
- Almost half (48%) of the patients referred as testicular torsion were diagnosed to have epididymo-orchitis
- All patients with suspected testicular torsion had scrotal exploration with or without orchidectomy/orchidopexy

Summary/Findings

- Most patients (78%) were discharged within 24 hours of admission
- 59% of patients were followed up, however 67% of patients with confirmed testicular torsion were followed up. Guideline recommends follow up for all patients with torsion.
- None of the reviewed patients with previous orchidectomy re-presented with torsion.

What are we good at?

- Our referral pathway works
- Ultrasonography does not delay management of torsion
- 85% of children were seen by surgeons within 3 hours
- Most patients were discharged with 24 hours
- 2/3rd of patients with torsion were followed up

Recommendation

- Urology/Paediatric Surgeons to follow up all patients with confirmed testicular torsion
- All patients referred as suspected testicular torsion should be seen by surgeons as early as possible
- To highlight to GPs regarding referral pathway: Under 5 with suspected testicular torsion to be referred to tertiary center

References

- British Association of Urological Surgeons (BAUS)
- British Association of Paediatric Surgeons (BAPS)
- Commissioning guide: British Association of Paediatric Surgeons, British Association of Paediatric Urologists 2016
- European Society for Paediatric Urology: Guidelines on Paediatric Urology, 2015
- SaTH guidelines on testicular torsion