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TWIST Scoring System for Testicular Torsion

I recently had a patient wheeled into my Pod by EMS. My attending, upper level resident, and I all pointed to the nurses for them to introduce the patient and give his brief story in order for bed placement. But all of our ears perked up when we heard the words 'testicular torsion'.

Patient: 30ish year-old M
HPI: Presented to OSH with CC of 'nausea/vomiting, scrotal swelling'
OSH ED Course: Worked up for n/v and abd pain: labs, CT abd/pelvis. Testicular US performed showing torsion in the L testicle. Pain meds given, manual detorsion attempted: unsuccessful. Prepared for transfer to other institution.
Arrival to other institution: Wheeled into Pod 1. As soon as EMS told nurses of the patient's HPI, I was at patient's side. I immediately consulted and paged Urology, placed an order for US testicle and called techs to make patient the highest priority, and put orders in for labs and pain control. Patient brought disc of OSH US with him and it was sent to Radiology for upload. Decision was made to go ahead and repeat the US at our facility since interventions had been made at the OSH after their scan and there was still time before the OR would be ready. Urology was at bedside in minutes, patient was taken quickly to US and then to the OR.
OR Course: Surgery was performed with no complication. Incision was made in the scrotal sac and testicles were evaluated. Detorsion was performed and both testicles were fixed with sutures. Appendix testis cauterized. Incision was closed and bacitracin ointment placed.
Dispo: Patient was discharged with pain control and antibiotics. Follow up in 4-6 weeks for evaluation of testicular atrophy and function.

My brief time with this patient was filled with time-critical actions. The case stuck with me as I wondered what could have been expedited or eliminated in order to get the patient to the OR as quick as possible. Was it necessary to repeat the US here? If we were waiting on the OR to be ready anyway, was there any harm in repeating it? These questions reminded me of an article I read in a recent EMRA magazine, In A Twist. It proposes a TWIST scoring system based on 5 physical exam findings: **Testicular Swelling, Hard Testicle, Absent Cremasteric Reflex, Nausea or Vomiting, High-riding Testis**. When applied in a prospective study of 338 patients with acute scrotal pain, the scoring system was shown to have a 100% NPV for scores under 2 and 100% PPV for scores above 5. It is proposed to aid clinicians in the disposition of high and low-risk patients without the use of the Doppler US, which is the current gold standard. The article states that the scoring system must be validated further before it becomes the standard of care in clinical practice, so I decided to apply it to my own patient. Pt's physical exam showed testicular swelling (2), a hard testicle (2), an absent cremasteric reflex (1), nausea and vomiting (1) and a high-riding testes (1) for a total of 7/7 on the TWIST scoring system. Because this score is above 5, we theoretically could have sent the patient immediately to the OR (had it been ready for him) rather than to the US scan

first. While I will await further validation of this system, I will keep the TWIST scoring system in mind for future torsion patients.

References / Further Reading

- Lewandowski, Tyler, and Dhimitri Nikolla. "In a TWIST." *EM Resident* Volume 41. Issue 5. Oct/Nov 2014: 44-45.
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