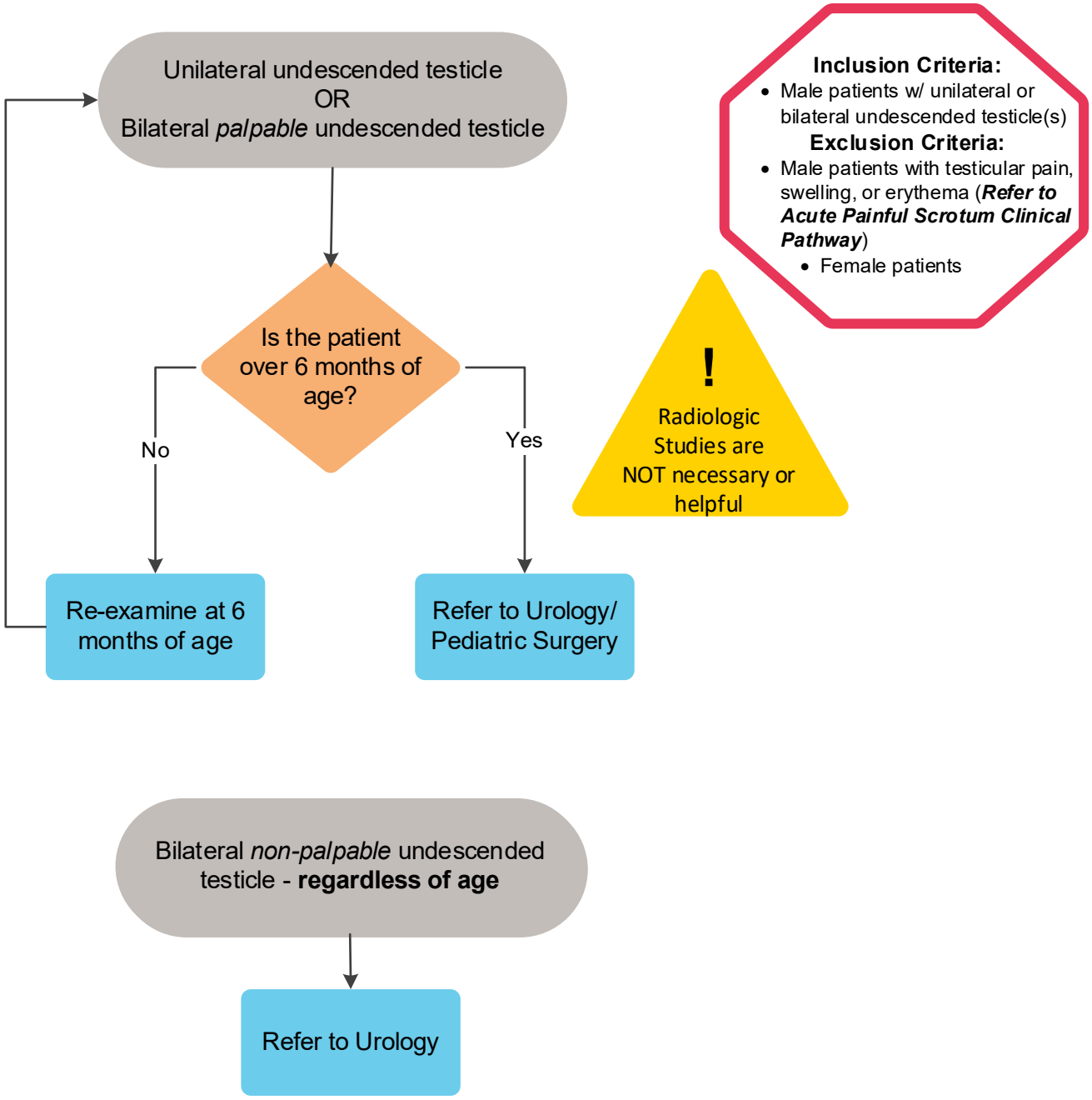
UNDESCENDED TESTICLE

ALGORITHM



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TARGET POPULATION

Inclusion Criteria:

- Male patients with unilateral or bilateral non-palpable testicle(s) on scrotal or inguinal examination.

Exclusion Criteria:

- Male patients with pain, swelling or erythema – please refer to the Acute Painful Scrotum pathway
- Female patients

BACKGROUND | DEFINITIONS

Epidemiology

Undescended testicle occurs in approximately 1% of term boys and up to 5% of premature or small for gestational age (SGA) boys (1). Up to 25% of testicles will descend spontaneously by 4 months of age. It is very rare to see spontaneous descent after 6 months of age (2). Approximately 2% of boys in the first 10 years of life will develop an ascending testicle (3).

Knowledge Base

- Undescended testicle (cryptorchidism) is defined as the failure of the testicle to descend into the scrotal position. This is frequently congenital. Undescended testicle can also be acquired and is referred to as an ascending testicle.
- A retractile testicle is one where the testicle is initially extra scrotal but can be manually placed into the scrotum where it stays at least temporarily without tension.

Risk Factors

- Prematurity
- Small for gestational age

Prevention

- There is no known method of prevention.

Consequences of Undescended Testicles

- Testicular Malignancy - Men with a history of an undescended testicle have an increased risk of malignancy. This is most common in the undescended testicle, but the contralateral testicle also has a slight increase in risk. With up to 1% of men getting malignancy, this is roughly twice the risk of men without an undescended testicle.
- Fertility - There is an association between undescended testicles and infertility.
    1. Bilateral descended: Approximately 8% are infertile
    2. Unilateral undescended testicle: Approximately 10% are infertile
    3. Bilateral undescended testicle: Approximately 38% are infertile

Differential Diagnosis

- Undescended Testicle
- Retractile Testicle
- Vanished or absent Testicle
- Disorder of Sex Development (DSD)

Value of Treatment

- Reduces malignancy risk if the testicle is brought into the scrotum before 10 years of age
- Enables easier self-examination of testicle
- Potentially improves fertility
- Normal appearing male genitalia

INITIAL EVALUATION

Telephone Triage

- Patients with pain, swelling or erythema of the scrotum should be referred immediately to the Emergency Department or on-call Urologist (or Pediatric Surgery if in Colorado Springs) for emergent evaluation.
- Patients over 6 months of age, who have seen their PCP, should be referred to Pediatric Urology/Pediatric Surgery with the aim of having a successful surgery by 12 months of age.

History

- Has the testicle been seen/felt in the scrotum, (especially when bathing as this may indicate a retractile testicle)?
- Were the testicles noted at birth?
- Does the testicle go up or down?
- Is a hernia ever noticed?
- How many gestational weeks was the patient when born?
- Is there a family history of undescended testicles, hernia or hydrocele?

Whom to refer

- Patients over 6 months of age (corrected for gestational age) with a testicle that cannot be brought into the scrotum without tension.
- Patients under 6 months of age with bilateral non palpable testicles – to evaluate for Disorders of Sex Development (DSD).

- Patients over 6 months of age with bilateral non palpable testicles - to evaluate for Disorder of Sex Development (DSD).
- If bilateral non palpable undescended testicles, the patient should be evaluated for Disorder of Sex Development. This could in in the multidisciplinary SOAR clinic.
- Patients with an undescended testicle and hypospadias to evaluate for a DSD.
- Patients under 6 months of age with a testicle that cannot be brought into the scrotum without tension, when there is an early request to see a Urologist/Pediatric Surgeon.

CLINICAL MANAGEMENT

- A thorough history and physical examination are essential to making the correct diagnosis.

Examination - Condition Specific

- Is the scrotum symmetrical and full?
- Can a testicle be seen in both sides of the scrotum? If not,
  - Can the testicle be felt at any point from the internal ring of the inguinal canal to the scrotum?
  - Can the testicle be felt in an ectopic location (femoral canal, lateral to the scrotum, perineum, close to the penis, on the contralateral side)?
- Are the two testicles equal in size and consistency?
- Is there a hernia or hydrocele?
- Is the penis normal or is there hypospadias? If hypospadias present, consider DSD in the differential diagnosis.

Treatment

- If a retractile testicle is diagnosed, a provider should reexamine the patient annually, as there is a risk of an ascending testicle developing.
- If an undescended testicle is diagnosed and the child is over 6 months of age, then surgical intervention is warranted, as hormonal therapy has low success and long-term efficacy has not been documented.
- Surgery
  - In prepubertal boys with palpable, undescended testicles a qualified surgical specialist should perform a scrotal or inguinal orchidopexy. Ideally this should be performed within a year of making the diagnosis (4).
  - Boys with a non-palpable undescended testicle should undergo an examination under anesthetic, if palpable, then an orchidopexy is performed, and if not, then the testicle or the absence of a testicle should be ascertained either by laparoscopy or surgical exploration.
  - In post pubertal males with an undescended testicle and normal contralateral testicle, an orchiectomy is a reasonable surgical option because of the increased risk of cancer.

LABORATORY STUDIES | IMAGING

- No laboratory or radiological investigations are necessary (unless bilateral non-palpable undescended testicles are present in which case, Mullerian Inhibiting Substance can be measured and its absence indicative of anorchia.)
- For boys with bilateral non palpable undescended testicles, the consulting team may consider measuring Mullerian inhibiting substance to evaluate for anorchia, where both testicles have not developed.

THERAPEUTICS

- No pharmacologic interventions are necessary.

PATIENT | CAREGIVER EDUCATION

- Patients and families should be taught testicular self-examination by PCP or specialist at follow-up, so that any future malignancy can be detected.

FOLLOW UP

- Patients should be reevaluated 3 months after surgery to assess:
  - If the testicle is correctly placed (surgery results in a 3-5% failure rate, usually due to the testicle slowly being pulled up out of the scrotum).
  - If the testicles are equal in size, as testicular damage can occur with surgery.
  - To ensure adequate healing from surgery.

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REVIEW | REVISION SCHEDULE

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