

# Salmonella Epididymo-Orchitis with Testicular Abscess in a Newborn Male

Evan Mackenzie Gibbs, Bryce Alden Baird\*, Dominic Frimberger  
University of Oklahoma Urology

\*Corresponding Author: Bryce Alden Baird, University of Oklahoma Urology

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## Abstract

There are few reported cases of epididymo-orchitis secondary to *Salmonella* in the literature and even fewer in newborn males without immunocompromised systems. The existing reports generally describe adult males in underdeveloped countries with immunocompromised systems or rheumatologic diseases undergoing steroid therapy. The last documented case of newborn epididymo-orchitis was in 1983 and required surgical debridement to salvage the testicle. [1] We present a case of a newborn male with *Salmonella* epididymo-orchitis and testicular abscess refractory to antibiotic treatment requiring eventual orchiectomy.

**Keywords:** Salmonella Epididymo-Orchitis; Testicular Abscess

## Introduction

There are few reported cases of epididymo-orchitis secondary to *Salmonella* in the literature and even fewer in newborn males without immunocompromised systems. The existing reports generally describe adult males in underdeveloped countries with immunocompromised systems or rheumatologic diseases undergoing steroid therapy. The last documented case of newborn epididymo-orchitis was in 1983 and required surgical debridement to salvage the testicle. [1] We present a case of a newborn male with *Salmonella* epididymo-orchitis and testicular abscess refractory to antibiotic treatment requiring eventual orchiectomy.

## Case

A 17-day-old infant presented to the emergency department with a one-week history of right hemiscrotal tenderness, swelling, and erythema. Outside records confirmed previous fever to 38.9°C and an initial WBC of  $26 \times 10^3/\mu\text{L}$ . History obtained from the patient's mother included no known exposure to *Salmonella*, no history of diarrhea or immunocompromised state, and no other significant past medical or family history.

On physical examination, the scrotum was found to be edematous and erythematous with the left testicle retracted into the inguinal canal and the right testicle descended into a dependent position. The right hemiscrotum was especially tender with a tense, fluctuant mass. Ultrasound demonstrated a 2 cm by 2.5 cm complex heterogenous fluid collection in the right scrotum. Adequate blood flow to bilateral testicles was noted with an increased flow on the right. A full sepsis work up was performed and was notable for a white blood count of  $14.52 \times 10^3/\mu\text{L}$  and a C-reactive protein of 38 mg/L. The patient was admitted for incision and

drainage of the scrotal abscess and administration of broad-spectrum intravenous antibiotics.

Intraoperative exploration revealed an infected right testicle that could not be salvaged, which resulted in right orchiectomy with drainage of 50cc of purulent exudate. During the procedure, tissue cultures were also obtained. A temporary Penrose drain was tunneled through a superior and an inferior incision in the right hemiscrotum. Pathology confirmed a testicular abscess with associated chronic active inflammation involving the tunica albuginea, epididymis, and spermatic cord.

Wound cultures ultimately grew a *Salmonella* species, and the patient was transitioned from broad-spectrum coverage to ampicillin accordingly. The Penrose drain was removed at bedside on postoperative day 3, and the incisions were left open to drain. An abdominal and pelvic ultrasound and voiding cystourethrogram were obtained in the follow up period to evaluate for possible anatomical abnormalities or vesicoureteral reflux. Results demonstrated no abnormalities suggestive of a possible etiology of the infection.

The patient remained afebrile and hemodynamically stable throughout his entire postoperative course. He was discharged home on postoperative day 5 to complete a 14-day course of amoxicillin 100mg/4ml oral suspension twice daily. A one-month follow-up appointment revealed complete resolution of the infection.

## Discussion

Localized extra-intestinal *Salmonella* infections are uncommon with approximately 70% of *Salmonella* infections being localized to the gastrointestinal tract. [2] In particular, epididymo-orchitis with testicular abscess is even rarer, especially in the pediatric population, with only a few cases reported in the literature. [1, 3] In fact, to our knowledge, this

seems to be the only case reported in literature of an immunocompetent two-week-old male with epididymo-orchitis and testicular abscess. Genital infections due to *Salmonella* are extremely uncommon. [4] They typically manifest in the setting of obstructive complications such as renal calculi or structural abnormalities. The vast majority of focal genital infection due to *Salmonella* is described in the adult population with few reports of this infection in children.

The diagnosis of epididymo-orchitis is typically made by history and physical examination in addition to ultrasound and laboratory workup. Patients generally present with abnormal physical signs such as fever, prolonged scrotal tenderness, warmth or erythema. [5] In particular, our patient presented with a two-day history of scrotal tenderness and erythema. Ultrasound imaging can be used to assist in the diagnosis of epididymo-orchitis. [6] The low cost, wide availability and relatively quick usage of such imaging makes it a viable option to gain more information about the differential diagnosis of the condition. In addition to imaging, laboratory tests such as blood counts, microbiology work-ups, stool tests, and cultures are common methods of evaluation with some studies recommending even more thorough and widespread infectious work-up. [7]

Once the patient is found to have an abscess, prompt surgical intervention should be utilized to resolve the infection and salvage any tissue that may be viable. [1] We elected to perform drainage of the abscess along with orchiectomy and subsequent drain placement due to the extent of necrosis and infection that did not allow for saving the affected testis.

## Conclusion

The current report describes the diagnosis and management of a rare case of *Salmonella* epididymo-orchitis, an uncommon pathology, especially among pediatric patients. To our knowledge, this is the first case of

*Salmonella* epididymo-orchitis with abscess in an otherwise healthy two-week-old male. Only one other case is described but was in a one-month-old male with a *Salmonella enteritidis* testicular abscess without epididymo-orchitis. The initial management of patients presenting with a *Salmonella* abscess is similar to other etiologies. Prompt surgical intervention with drainage of the abscess and removal of necrotic tissue is necessary to control the infection and salvage viable tissue. Once the pathogen is identified, appropriate workup and management with culture proven sensitive antibiotics should be initiated and the patient followed until complete resolution.

## References

1. Foster, R., et al. (1983) *Salmonella enteritidis: testicular abscess in a newborn*. J Urol, 130(4): p. 790-791.
2. Cohen, J.I., J.A. Bartlett, and G.R. Corey. (1987) *Extra-intestinal manifestations of salmonella infections*. Medicine (Baltimore). 66(5): p. 349-388.
3. Berner, R., et al. (1994) *Salmonella enteritidis orchitis in a 10-week-old boy*. Acta Paediatr. 83(9): p. 992-993.
4. Lalitha, M.K. and R. John. (1994) *Unusual manifestations of salmonellosis--a surgical problem*. Q J Med. 87(5): p. 301-309.
5. Chiang, M.C., et al. (2007) *Clinical features of testicular torsion and epididymo-orchitis in infants younger than 3 months*. J Pediatr Surg. 42(9): p. 1574-1577.
6. Muttarak, M., et al. (2001) *Tuberculous epididymitis and epididymo-orchitis: sonographic appearances*. AJR Am J Roentgenol. 176(6): p. 1459-1466.
7. Hermansen, M.C., M.J. Chusid, and J.R. Sty, *Bacterial epididymo-orchitis in children and adolescents*. Clin Pediatr (Phila). 19(12): p. 812-815.