

# Rapid improvement of burning scrotum syndrome with indomethacin



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## INTRODUCTION

Burning scrotum syndrome (male genital dysesthesia or red scrotum syndrome) is a cutaneous dysesthesia characterized by persistent erythema of the anterior half of the scrotum.<sup>1</sup> It is accompanied by a burning sensation, heat, irritation, and hyperalgesia of the scrotum.<sup>1</sup> Previous reports have shown oral gabapentin, pregabalin, doxycycline, and beta-blockers as possible treatment modalities.<sup>2-4</sup> Here, we report a case of burning scrotum syndrome treated with indomethacin.

## CASE REPORT

A 41-year-old man presented to the Mayo Clinic for scrotal pain and erythema with burning sensations. He had been treated for an unknown rash at the tip and body of the penis 1.5 years previously with nystatin and saline. While the rash improved, the discomfort at the penis continued, and the pain began to radiate to the scrotal area. Other previous treatment attempts included azithromycin, moxifloxacin, betamethasone, acrolimus, and crisaborole. While the azithromycin 1 gram one time helped achieve complete resolution for a week, the remainder of the therapies did not result in any improvements. Ibuprofen 400 mg twice daily was trialed at the onset of symptoms, without any improvement. Systemic steroids were previously prescribed and helped briefly.

Physical examination revealed a well-margined inflammatory red patch limited to the scrotum. The diagnosis of red scrotum syndrome was made based on appearance and symptoms. Doxycycline 100 mg twice daily and 0.5% topical menthol/0.5% camphor were tried for 2 months; however, no improvement was seen apart from partial, temporary relief with menthol/camphor. Therefore, doxycycline

was discontinued, and indomethacin 50 mg 3 times daily was initiated. Topical menthol/camphor was used as needed for symptom relief. The patient reported improvement of both pain and erythema (60%-70%) by 10 days of indomethacin treatment. At the 4-week follow up, the patient reported complete remission of symptoms; by that point, he had self-reduced the dose to 50 mg twice daily due to minor gastrointestinal discomfort. He was then instructed to continue indomethacin 50 mg twice daily for an additional 2 weeks, and then to stop. After discontinuing the medication, the patient experienced occasional minor flares, for which he initially took indomethacin 50 mg twice daily for a few days, then 50 mg 3 times per week. However, the intensity of flares gradually decreased and responded to lower amounts of indomethacin, sometimes as low as a single dose of indomethacin 50 mg. Five months after commencing the indomethacin treatment, his burning scrotum resolved, and no more indomethacin was required.

## DISCUSSION

Burning scrotum syndrome typically affects males in their second half of life. The exact cause of burning scrotum syndrome is yet to be determined, but various mechanisms have been proposed. These include prolonged topical corticosteroid use, leading to rebound vasodilation, neurogenic inflammation, and localized erythromelalgia.<sup>5</sup> On histology, telangiectasia without prominent inflammation can be seen, but there are no pathognomonic findings.<sup>2</sup>

We report rapid improvement of burning scrotum syndrome with the use of indomethacin. Indomethacin is a nonsteroidal anti-inflammatory drug inhibiting prostaglandin synthesis and causing vasoconstriction. Indomethacin has been shown to

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have the greatest vasoconstrictive effects in the ileocecal area and to increase mesenteric vascular resistance.<sup>6</sup> The testicular arteries arise directly from the aorta, typically at the L2-L3 vertebral levels. The superior mesenteric artery arises above (L1), and the inferior mesenteric artery arises below (L3) the level of the testicular arteries from the abdominal aorta. Given the close proximity of the testicular artery to the mesenteric arteries, we speculate that indomethacin exerts similar vasoconstrictive effects on the testicular vasculature, resulting in its profound effects on burning scrotum syndrome.

In contrast, ibuprofen had no effect on burning scrotum syndrome in this patient. Similar to indomethacin, ibuprofen is also classified as a nonsteroidal anti-inflammatory drug. However, its effects are primarily on thromboxane inhibition, with only mild inhibitory effects on prostaglandin. In addition, ibuprofen has not been shown to alter mesenteric blood flow. A comparison of intravenous ibuprofen and indomethacin for the treatment of patent ductus arteriosus showed a significant decrease in mesenteric and renal blood flow velocity 30 minutes after administration as measured by Doppler ultrasonography. In contrast, ibuprofen did not change the blood flow 30 minutes after administration and increased blood flow 120 minutes after treatment.<sup>7</sup> Taken together, we speculate that burning scrotum syndrome may be due to prostaglandins/mesenteric

blood flow, given the rapid resolution with indomethacin and lack of response to ibuprofen.

Our report suggests indomethacin as treatment for burning scrotum syndrome, with rapid results. There is a need for larger randomized studies to confirm the efficacy of indomethacin as a generalized treatment for the condition.

#### Conflicts of interest

None disclosed.

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