



RESEARCH ARTICLE

Epididymo-orchitis in spinal cord injury patients on CIC: A case series

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Abstract

Clean intermittent catheterization (CIC) is an excellent technique in minimising urinary complications in SCI patients. Its introduction has dramatically changed the Urological management of SCI patients. However, two long term problems remain: that of urethral tolerance, and that of epididymitis, the consequence of persistent urethrostatic infection. Here, we report an unexpected complication of CIC in 3 patients with SCI.

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Introduction:-

Spinal cord injury (SCI) is a serious medical condition that causes disability throughout life. Bladder dysfunctions are one of the most common complications seen after SCI, which has the prevalence of 70–84%.¹ Clean intermittent catheterization (CIC) is one of the methods used for the management of bladder dysfunctions. CIC is a suitable method for spinal cord injured patients who have adequate hand strength, no obstruction in the urethra, and co-operation and willingness.² The use of CIC in patients with SCI provides not only appropriate emptying of the bladder but also the continence. In addition, CIC prevents serious lower urinary tract infections and upper urinary tract system damage. However, infection, haematuria, urethral trauma, urethritis, and the remaining of a foreign body are some of the complications of CIC.³ Epididymo-orchitis is one of the common genital infections in SCI. Although the exact mechanism involved in the development of epididymo-orchitis is currently unknown, the process is believed to be common to patients on CIC.^{4,5}

Case 1

A 42-year-old married male presented with 5-months-old traumatic paraplegia with neurogenic bladder and bowel secondary to a fall from 25 feet height in January 2022. On examination, the patient was found to have a neurological level injury –T12 with American Spinal Injury Association Impairment Scale-A. The patient underwent posterior instrumental fixation of T11 and L1 and decompression of T12. After 6 months of injury, the patient was admitted for rehabilitation, and the patient was on an indwelling catheter at the time of admission.

After bladder assessment, the patient was prescribed tablet Imipramine 25 mg BD and tablet Sofefenacin 5 mg BD and started on CIC. After 2 weeks of CIC, the patient started complaining of right inguinoscrotal swelling associated with episodes of fever. On examination, 5 x 5cm tender swelling on right scrotum with localised rise of temperature and thickened cord was noted. On investigation, total leukocyte counts were 12290 with DC- N80 L17 M1 E2 B0 and ultrasound investigation was suggestive of right epididymo-orchitis. Thus, epididymo-orchitis was confirmed.

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Surgery consultation was done and conservatively managed with Injection Ceftriaxone 500 mg IM stat and tablet Levofloxacin 750 mg BD.

Case 2

In July 2020, we received a referral for inpatient rehabilitation for a 20-year-old single male who had been diagnosed with paraplegia one year back and neurogenic bladder and bowel due to long segment myelitis. At the time of admission, the patient was on PUC. A clinical bladder examination was done and initiation on CIC was done as part of the rehabilitation process because the patient had poor trunk balance. Due to leakage, tablet Imipramine 10 mg OD and tablet Tolterodine 2 mg BD have been added. The patients experienced a high-grade fever and bilateral inguinoscrotal discomfort and swelling within a week of starting CIC. The results of the local examination showed a localized increase in temperature along with a 6 x 4 cm swelling in the scrotum on the right and a 4 x 4 cm swelling with similar features on the left. Both spermatic cords could be felt. Investigations revealed that TLC was high and that bilateral epididymo-orchitis was the finding on ultrasound and treated with NSAIDs and oral antibiotics.

Case 3

A 47-year-old married man with a neurological level of injury of L1 and an American Spinal Injury Association Impairment Scale-B presented with traumatic paraplegia and neurogenic bowel bladder following a fall from height in February 2022. The patient had posterior T12 and L2 instrumental fixation and L1 decompression within 24 hours of the injury. At the time of admission, the patient was on indwelling catheter; after bladder evaluation, the patient was started on CIC. The patient noticed left inguinoscrotal swelling after two weeks of CIC, which was accompanied by fever bouts. On examination, a 3 x 5 cm scrotal swelling, a localized temperature increase, and thicker cord were discovered. Following investigation, the inguinoscrotal region ultrasound revealed left epididymo-orchitis with total counts of 13450 with DC-N78 L21 M0 E1 B0. After surgical consultation, tablet Doxycycline 100 mg BD was started.

Discussion:-

We describe three cases who developed epididymo-orchitis after CIC. **Ku et al** retrospectively studied on the influence of bladder management on epididymo-orchitis in 140 patients with SCI and concluded that CIC was an independent risk factor for the development of epididymo-orchitis in these patients and that urethral stricture may be a contributing factor for the development of epididymo-orchitis. Genital infection may lower fertility in SCI patients.⁶ Although the exact mechanism involved in the development of epididymo-orchitis is currently unknown, the process is believed to be common to patients on CIC. There are not much data available.

Mirsadraee et al retrospective notes audit of 169 male traumatic spinal cord injured (SCI) patients was performed. In addition, interviews were performed to confirm any equivocal data. A total of 65 patients from our group (38.5%) had suffered E-O at least once. E-O presented on average, 3.9 years after the SCI. Patients with a history of muscular spasm appeared less likely to develop E-O ($P < 0.05$). None of the vasectomised patients developed E-O. The relation between all the other factors and E-O were not significant.⁷ Nearly 40% of our patient group with SCI suffered E-O. Published data report up to 30% epididymo-orchitis rates in SCI patients whichever the mode of voiding.⁸

Epididymo-orchitis rate in SCI patients who used clean intermittent catheterisation (CIC), ranged from 9 to 28.5%.^{9,10} Perrouin-Verbe et al,⁴ reported a higher rate of epididymo-orchitis in a group who used CIC in the acute stage of the injury versus a group who used CIC late on.

CIC has proved its efficiency in the management of neuropathic bladders and has allowed a different approach to the problems of continence and dysuria. The indications for CIC in spinal cord injury (SCI) patients are multiple.

Conclusion:-

In this series, we found that CIC constituted a distinct risk factor for the development of epididymo-orchitis in patients with SCI. Urethral trauma and existence of predisposing UTI are suggested to be contributing factors for the development of the same. Giving precise instructions about CIC is essential. Generous use of lubricants and leaving the catheter at the external sphincter for a minute before easing it gently into the bladder could be a preventive measure. Our findings suggest that CIC may be a contributing factor for the development of epididymo-orchitis in these patients.

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