

When is it safe to operate after the failure of therapeutic steroid injections in carpal tunnel syndrome?

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Madam, Carpal Tunnel Syndrome (CTS) is a multifactorial neuropathy caused by the compression of the median nerve due to its entrapment as it passes through the carpal tunnel in the wrist. It accounts for nearly 90% of neuropathies and usually presents as numbness, tingling, weakness, and pain. These symptoms are predominantly present in the thumb, second finger, third finger, and radial half of the hand's fourth finger. In the US, CTS has a prevalence of 50 per 1,000, which is similar to the prevalence in other developed countries.¹ Overall, the prevalence of CTS in the general population in developed countries ranges from 3% to 6%, whereas the prevalence of CTS in developing countries like Pakistan has been reported to be from 10% to 15%.²

The management of mild to moderate CTS ranges from conservative management, including ultrasound therapy using the pulsed mode, wrist splinting, and tendon gliding exercises, to Neuro-mobilization.³ On the other hand, the management of moderate to severe CTS, which is unresponsive to the above-mentioned therapies comprises therapeutic steroid injections and surgical decompression of the median nerve. In many cases, surgical decompression is used as a last resort after the failure of therapeutic steroid injections. However, studies have shown that surgical decompression in these cases is associated with poor postoperative outcomes, including increased risk of pain and paresthesia.⁴ Furthermore, such cases are also associated with an increased risk of surgical site infections, non-infectious wound complications, and 1 year-reoperation. The risk of these complications is maximum when surgery is performed within 30 days of the last therapeutic steroid injection along with a high number of therapeutic steroid injections (infections 1.77%, non-infectious complications 1.12%, 1-year re-operation 2.09%), and is minimal when performed from 90 to 180 days of the last therapeutic steroid injection with a low number of therapeutic steroid injections (infections 1.19%, non-infectious complications 0.44%, 1-year re-operation 1.58%). Therefore, surgical decompression of the median nerve

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Submission complete: 01-11-2023

Acceptance: 29-02-2024

Review began: 15-12-2023

Review end: 17-02-2024

should be delayed for 90 to 180 days after the last therapeutic steroid injection, depending on the severity.⁵

There is a high prevalence of CTS in developing countries like Pakistan and therapeutic steroid injections are frequently prescribed as first-line treatment for moderate to severe CTS. The patients receive multiple therapeutic steroid injections due to the ease of their availability until the symptoms are so severe to require surgical decompression. In such cases where patients require surgical decompression, there is often a small gap between the last shot of steroid injection and the surgery. This time gap can pose several risks, including a higher chance of post-operative symptom recurrence, as well as an increased risk of both infectious and non-infectious wound complications. These complications may necessitate frequent re-operations. To mitigate these risks, it is recommended that patients with moderate to severe carpal tunnel syndrome undergo early surgical intervention, ideally after receiving none to a minimal number of therapeutic steroid injections. Additionally, 90 to 180 days should be delayed between the last steroid injection and the surgery. This delay is crucial in minimizing postoperative complications and the need for subsequent operations.

Disclaimer: None.

Conflict of Interest: None.

Funding Source: None.

DOI: <https://doi.org/10.47391/JPMA.11142>

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