Multiple Injection Method for Intercostal Nerve Neurolysis

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Introduction

Thoracotomy is among surgical procedures considered to be highly associated with severe postoperative pain. Postoperative pain can lead to severe respiratory problems including hypoxia, atelectasis and pulmonary infections. Such problems may cause alarming situations and result in respiratory failure. Hence, pain management bears vital importance in order to minimize the rates of morbidity and mortality in patients who have undergone thoracotomy.

Neurolytic blocks could be employed for prolonged pain relief. They could also help in eliminating many usual opioid-related adverse effects. In this study, we would like to present the neurolysis procedure we performed selectively on 3 different spots on the nerve using multiple injection technique to treat a patient with pain at 3 different spots along the intercostal nerve trace. In the literature search we performed, we did not find any examples for selective neurolysis procedure performed using multiple injection technique on the same nerve in the same session.

Cases Report

A male patient aged 53 was diagnosed with mesothelioma and operated on for tumor resection. On the 6th postoperative day, the patient still suffered from thoracotomy pain and was discharged with the recommendation to continue analgesics treatment. However, 15 days later, the patient was admitted to the algology clinic with severe pain that could not be eased with analgesics and preventing his breathing. During the physical examination of the patient, severe pain at 3 different spots was observed in the site where thoracotomy incision was made in the lateral region of the chest on the 4th intercostal dermatoma. This made us think of some damage in the lateral cutaneous branch of the intercostal nerve. Thus, we decided to perform percutaneous neurolysis on the 3 painful spots. On a fluoroscopy-compatible operating table, the patient was positioned in the lateral decubitus position and standard monitorization was performed.

After aseptic preparation and draping, prior to neurolysis, 1% lidocaine was administered on the 3 spots with pain at an amount of 1 cc each for diagnostic reasons. It was observed that the patient's pain disappeared. The needles were kept in place and 0.5 cc radiopaque on each spot was administered. That the needles were on the right spots was observed. Then, neurolysis was performed with the administration of 50% alcohol of 1 cc on each spot (figure). Following the procedure, the patient stated that his pain disappeared completely. The patient was followed up for 3 months, which were free of pain.

Discussion

It is of great importance to control and treat pain effectively following thoracotomy, one of the most painful surgical procedures. Thus, pulmonary complications, delayed mobilization, late discharge and chronic pain can be avoided.

In our case, to treat a patient with pain on 3 different spots on the lateral cutaneous branch of the intercostal nerve, we performed neurolysis selectively on these 3 different spots on the nerve using multiple injection method instead of posterior paravertebral neurolysis with a single injection on the intercostal nerve.

Conclusion

We are of the opinion that in such cases, multiple injection is a better choice when compared to posterior paravertebral neurolysis as it does not give way to the complications that may be involved in the latter, and it prevents the pain from becoming chronic in later stages.

References

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