[NM-191] Ultrasound-guided costochondral joint injection in an adolescent with costochondritis

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Introduction

Musculoskeletal pain accounts for 15-31% of pediatric chest pain encounters and 9-14% of these patients are diagnosed with costochondritis.1 Since costochondritis is an acute inflammatory condition of the cartilaginous joints between the costal cartilage and ribs, most cases are treated conservatively with rest and non-steroidal anti-inflammatory medications. Refractory cases, however, may require physical therapy and intra-articular steroid injection into the costochondral joints. We report a case of refractory costochondritis in a pediatric patient that was treated with ultrasound-guided costochondral joint injections.

Case Report

An 11-year-old, 40kg female was referred to the chronic pain clinic complaining of chronic chest discomfort, tightness and pain. Her history was significant for an intermittent productive cough that began after a documented exposure to mold. She had undergone an extensive medical workup and was diagnosed with costochondritis and pleurodynia. After failing treatment with anti-inflammatory medications and physical therapy, she was treated with surface landmark-guided costochondral joint injections. She received some temporary pain relief with these injections, but we elected to perform her subsequent injections with ultrasound guidance to confirm intra-articular medication placement.

Preoperatively, the patient identified the location of her tender anterior chest wall foci and subsequently underwent general anesthesia prior to the injections. A GE Logiq e™ ultrasound platform with a linear 8-12 MHz transducer was used to evaluate her costochondral joints in long axis view. After the joint space was identified, 2.5 mg of bupivacaine and 5 mg of triamcinolone was injected using an in-plane approach with a 25-gauge 1.5-inch needle. Twelve joints were injected without complications. The patient was discharged from the post-anesthetic care unit pain-free.

Discussion

The definitive diagnosis and treatment of costochondritis is challenging because the cartilaginous and joint space inflammation is difficult to visualize utilizing plain film radiographs or tomography. Diagnostic ultrasound may serve a role in identifying effusions, synovitis, increased perfusion, and costal cartilage changes.2
In addition to aiding the diagnosis of costochondritis, ultrasound may prove to be a useful therapeutic adjunct to targeted injections. Although pneumothorax is a rare complication of costochondral joint injections, it is likely a preventable complication with ultrasound guidance.3

Conclusion

Musculoskeletal chest wall pain is a frequent complaint in the pediatric patient. Although most cases of costochondritis will resolve with conservative management, refractory cases may require intra-articular steroid injection.

References

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