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Atypical pain location due to gastroesophageal reflux disease in a patient with severe scoliosis

Şiddetli skolyozu olan bir hastada gastroözofageal reflü hastalığına bağlı atipik ağrı lokasyonu

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Poliomyelitis is one of the causes of neuromuscular scoliosis. Scoliosis prevalence is 50% among those with poliomyelitis. Patients with neuromuscular scoliosis commonly experience back pain, and the prevalence of this pain has been reported as moderate to high.[1] In patients with scoliosis, the pain typically originates from the discs, facet joints, or paraspinal muscles.[2] Additionally, spinal deformity can lead to dysfunction in nearby internal organs, particularly those located close to the spine, which may contribute to pain.[3] In clinical practice, referred pain from internal organs can sometimes be confused with musculoskeletal pain caused by scoliosis.

A 58-year-old man presented to the outpatient pain management clinic with complaints of back pain. The patient reported experiencing back pain for approximately six months, with no variation in pain intensity during movement or rest. The patient rated his pain as 7/10 on the Numeric Rating Scale (NRS) and did not recall any specific event that triggered the pain. The patient described the pain in his back as a dull pain. He had poliomyelitis during childhood, which resulted in muscle weakness in his right leg. Previously, the patient had consulted the internal medicine, pulmonology, neurosurgery, and physical therapy departments for his back pain and was prescribed various nonsteroidal anti-inflammatory drugs for pain management. His medical history included diagnoses of poliomyelitis and type 2 diabetes. At the time of presentation, he was taking naproxen 500 mg twice daily and metformin 500 mg once daily.

During the patient's physical examination, muscle strength in the right lower extremity was 2/5, with a 4-cm shortening in the right lower extremity as well as atrophy in the right thigh and cruris. The patient also had rotoscoliosis. Moreover, there was marked paravertebral tenderness at the thoracolumbar junction on both sides. Radiographic imaging revealed an S-shaped rotoscoliosis with the upper curve convex to the right and the lower curve convex to the left, as shown in Figure 1. A facet joint injection at the thoracolumbar junction was recommended, but the patient declined. The patient was prescribed an 800 mg extended-release ibuprofen tablet once daily, a combination of a 37.5 mg tramadol and a 325 mg paracetamol tablet three times daily, and a 40 mg esomeprazole tablet once daily. Following consistent use of the medications, the patient reported an NRS score of 1 at the two-week follow-up visit. The patient was advised to continue with the tramadol-paracetamol combination. At the follow-up visit approximately two weeks later, his pain had increased to an NRS score of 5, prompting the re-prescription of ibuprofen. Moreover, two weeks after that, his NRS score was 8. Although pain had significantly reduced initially with the combined use of the medications, the patient reported minimal

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Figure 1. The scoliosis of the thoracolumbar spine on a plain radiograph.

pain relief when taking the medications individually. Another striking finding was that despite being prescribed a proton pump inhibitor at his first visit, the patient had not taken the medication beyond the initial two weeks. Esomeprazole at 40 mg once daily was prescribed again, along with an oral suspension containing sodium alginate, sodium bicarbonate, and calcium carbonate, to be taken three times daily. After empirical antacid treatment, the patient's NRS score was 1 at the follow-up visit three weeks later. The patient was referred to the gastroenterology outpatient clinic, and endoscopy revealed widespread esophageal inflammation and a sliding hiatal hernia. At the six-month follow-up endoscopy, there was a significant reduction in esophageal inflammation. After the patient's endoscopic findings of esophageal inflammation disappeared, the patient's NRS score was 0. The patient continues to take esomeprazole as prescribed. A written informed consent was obtained from patient.

In adults with scoliosis and a degenerative spine, the risk of developing gastroesophageal reflux disease (GERD) and hiatal hernia is higher. Structural changes in the vertebral column can lead to a reduction in intra-abdominal volume, increased intra-abdominal pressure, and stretching of the esophageal sphincter, all of which contribute to the development of reflux and hiatal hernia.[3] In patients with esophageal disorders, pain typically presents as heartburn, epigastric pain, and retrosternal pain. These symptoms often worsen after meals and when lying down.[4]

Mittal and Le[5] reported that there may be a relationship between esophageal symptoms and thoracolumbar pain. Their study suggested that changes in the thoracolumbar spine could affect the diaphragm, which in turn may affect the esophageal hiatus muscles, leading to esophageal symptoms. In a case reported by Yang et al.,[6] a 15-year-old patient with severe thoracolumbar kyphoscoliosis experienced years of back pain and gastrointestinal symptoms, including abdominal pain, heartburn, and dysphagia. Endoscopic examination revealed severe reflux gastroesophagitis and a hiatal hernia associated with the spinal deformity. Following spinal correction surgery, the patient's gastrointestinal symptoms resolved completely. Although typical symptoms of reflux esophagitis, such as dysphagia and heartburn, were present in that case, the absence of such symptoms in our case made diagnosis more challenging. Moreover, although the case we presented did not exhibit typical pain localizations of GERD and hiatal hernia, the predominant presentation of back pain was notably atypical. However, our patient's severe esophageal inflammation was demonstrated by endoscopy. The disappearance of pain, together with the significant decrease in esophageal inflammation, indicated that the source of the pain was GERD.

In conclusion, in patients with severe spinal deformities, the source of pain may not be musculoskeletal. Moreover, in cases where pain persists despite musculoskeletal treatment, it should be considered that the pain may originate from internal organs, especially those close to the spine. In patients with severe spinal deformity, pain associated with GERD and hiatal hernia may manifest in atypical locations, such as back pain.

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