

Difficult Transesophageal Echocardiography Probe Insertion Due to Cervical Diffuse Idiopathic Skeletal Hyperostosis

To the Editor,

An 83-year-old man with hypertension and hyperlipidemia was followed for several years for aortic stenosis. He developed dyspnea during exertion and was admitted to the hospital with congestive heart failure. On admission, transthoracic echocardiography indicated severe aortic stenosis (aortic valve area 0.81 cm², Vmax 4.35 m/s, mean pressure gradient 44.1 mmHg) with a left ventricular ejection fraction of 64%. The patient was scheduled to undergo an aortic valve replacement. He had no history of dysphagia, dysphonia, neck pain, or neck stiffness. Preoperative evaluation using transesophageal echocardiography (TEE) was not performed.

Upon arrival in the operating room, we provided general anesthesia with 5 mg of midazolam, 250 µg of fentanyl, and 50 mg of rocuronium. Endotracheal intubation was performed using a McGRATH MAC video laryngoscope (Aircraft Medical Ltd., Edinburgh, UK). We attempted to insert a TEE probe blindly; however, several attempts failed to deliver the probe into the esophagus due to unexpected resistance. We attempted to insert

the probe under McGRATH MAC video laryngoscope guidance, but we could not observe the esophageal inlet due to the prominence of the posterior pharyngeal wall. We gave up inserting the probe and the surgery was performed uneventfully without a TEE. Computed tomography after surgery confirmed the presence of large anterior cervical osteophytes causing ventral displacement of the posterior pharyngeal wall [Figure 1a], which correlated with difficult probe insertion. Radiography of the cervical spine showed extensive ossification of the anterior longitudinal ligament, which was particularly prominent at the C4–C7 vertebral level [Figure 1b]. Therefore, he was diagnosed with diffuse idiopathic skeletal hyperostosis (DISH).

Although various esophageal pathologies cause difficult probe insertion and are cited as contraindications to TEE,^[1] it is not well known that cervical osteophyte compression of the esophagus is associated with difficulty in probe insertion. DISH is a non-inflammatory disorder characterized by calcification and ossification of ligaments along the sides of contiguous vertebrae of the spine

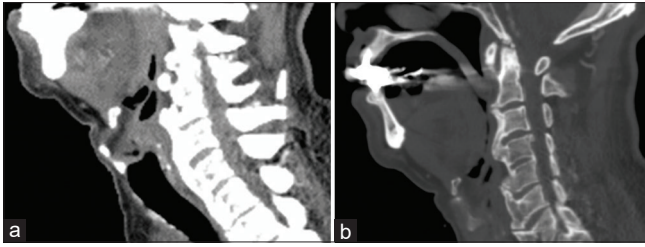


Figure 1: (a) Computed tomography showing the presence of large anterior cervical osteophytes causing ventral displacement of the posterior pharyngeal wall; (b) Radiography of the cervical spine showed extensive ossification of anterior longitudinal ligament

which induces dysphagia and dysphonia.^[2] It is estimated that 3% of people over 40 years of age have DISH, but cervical spine alterations are less frequent than those of the thoracic or lumbar spine.^[3] Royer *et al.*^[4] reported a case of esophageal perforation after TEE due to compression of the esophagus by prominent thoracic vertebral osteophytes during transcatheter aortic valve implantation. Chang *et al.*^[2] suggested that prominent cervical and thoracic vertebral osteophytes should be considered relative contraindications to TEE because direct pressure and friction by the probe against sharp vertebral osteophytes led to esophageal laceration. DISH has been reported to be associated with calcification of the aortic valves;^[5] therefore, vertebral osteophytes may be relatively frequent in transcatheter aortic valve implantation and aortic valve replacement. Fortunately, there were no complications in our case. However, caution should be exercised as repeated attempts at blind TEE probe insertion as it can result in various complications. In conclusion, it is important to carefully check computed tomography before TEE to determine the severity of anterior vertebral osteophytes.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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