CT and MRI. Microscopically, chordoma manifests as 1 of 3 types: classic, chondroid, or dedifferentiated [3]. The mainstay of treatment of chordoma is en bloc excision with wide margins and postoperative external-beam radiation therapy. Radical resection of chordoma with negative tumor margins significantly decreases local recurrence rates compared with incomplete excision [4, 5]. The addition of radiation therapy can lead to 5-year local control of 10% to 40% and increases overall survival after incomplete resection [2]. However, the proximity of the spinal cord to the chordoma limits the maximal deliverable dose of conventional radiation therapy to 40 to 60 Gy. Newer techniques in radiation therapy, such as the 3-dimensional conformal technique combining photon and proton beams, can allow higher doses of radiation to be delivered to the target tumor site while minimizing injury to the surrounding tissue, especially the spinal cord [2, 6]. Overall, conventional chemotherapy has been proved ineffective in the treatment of chordoma.

In summary, chordoma is a very rare tumor arising from notochordal remnants. It has a high local recurrence rate despite aggressive debulking operations combined with radiation therapy.

References

Rare Case of Lung Abscess Caused by a Swallowed Denture

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Accidentally swallowed dentures can cause serious complications when they are not diagnosed and treated promptly. We report an extremely rare case of a lung abscess caused by a swallowed complete denture. Chest computed tomography and endoscopic examination revealed that a swallowed denture migrated to the right upper lobe through an esophagopulmonary fistula, and a lung abscess developed. A life-saving and curative operation was performed with no significant postoperative complications. To the best of our knowledge, such a clinical condition has not yet been described in the literature.

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Swallowing dentures and dental plates is not so rare among elderly patients. Most patients are aware of the diagnosis before seeking treatment; exceptions are in the mentally handicapped, the demented, and those under the influence of alcohol [1]. Managing swallowed dentures is problematic in that they are sharp and have been associated with high morbidity and mortality because of abscess formation or perforation causing mediastinitis. Most swallowed dentures land in the gastrointestinal tract, but some persist in the esophagus. Once a foreign body is impacted in the esophagus, life-threatening complications, such as esophageal perforation, penetration to the great vessels, esophagotracheal fistula, and mediastinitis, become grave concerns. We present the case of an 85-year-old woman who accidentally swallowed her denture and received a radical operation, along with a brief review of the available literature.

An 85-year-old woman first presented to a medical practitioner with a 1-week history of anorexia and cough. Because she could not explain a clinical history and symptoms adequately on account of her dementia, her family believed she had a common cold. Chest roentgenograph showed a strange shadow similar to human teeth in her upper lung field (Fig 1). She was diagnosed with a pulmonary foreign body and sent to our hospital. At the initial visit, it was very difficult to communicate with her as a result of her dementia, but the lack of denture could be confirmed. Chest computed tomography revealed the existence of the swallowed denture in the right upper lobe with abscess formation. Computed tomography also showed an esophagopulmonary fistula connecting to the lung abscess (Fig 2). Endoscopy was performed, which revealed the esophagotracheal fistula in the right wall at a level of 18 cm from the incisors; a small part of swallowed denture and necrotic lung tissue were observed in the abscess cavity (Fig 3). However, because catastrophic hemorrhage was a major concern, an attempt was not made to remove the denture endoscopically during esophagoscopy. The emergency operation was performed through a standard right posterolateral thoracotomy. Although inflammatory adhesion of the lung parenchyma with parietal or mediastinal pleura was significant, there were no

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signs of empyema, mediastinitis with abscess formation, or esophageal perforation of the thoracic cavity. Excision of the right upper lobe, including the swallowed denture, was performed (Fig 4). The esophagopulmonary fistula was transected using reticulated staplers, and the esophageal stump was covered with the fourth intercostal muscle flap. Furthermore, gastrostomy was performed simultaneously to supply nutrition not by oral intake.

Postoperatively, the patient recovered well. Tubal feeding through the gastrostomy tube was started on the seventh postoperative day. Before beginning the oral diet, we performed a Gastrografin esophagram, which showed no evidence of leakage. The patient was discharged on
the 77th postoperative day and was moved into sheltered accommodation for the elderly.

Comment
Although the exact incidence of dentures as gastrointestinal foreign bodies is not known, it represents a significant problem because of a high rate of morbidity and mortality. Because elderly people with dementia cannot explain precise symptoms or medical history, it is especially tricky to diagnose their problems as swallowed foreign bodies. A significant number of ingested bulky foreign bodies get lodged in areas of anatomic esophageal narrowing with the danger of impaction, ulceration, and perforation in those areas. Because dentures are hard and complicated forms, sometimes with sharp or uneven surfaces, the risk of esophageal injury leading to perforation or penetration is high. If possible, impacted dentures in the esophagus should be removed by careful endoscopic approach. Several endoscopic procedures are available for retrieval, such as extraction with forceps, balloon extraction, bougienage, and magnetic extraction [2, 3]. By contrast, the large size, sharp edges, and metal clasps of dentures make endoscopic extraction unsafe [4]. In the patient presented here, endoscopic removal was impossible because the impacted denture had already migrated into the lung parenchyma through an esophagopulmonary fistula. In cases not amenable to endoscopic removal, thoracotomy or thoracoscopic surgery is necessary [5].

If early extraction of the foreign body is not performed, pressure on the esophageal wall can lead to necrosis followed by penetration or perforation. Because of the close relationship between the esophagus and the aorta, an impacted denture can even penetrate the aorta [6]. In addition, morbidity and mortality after esophageal perforation is high because it is often followed by fulminating sepsis owing to severe intrathoracic infection, mediastinitis, and pleural empyema. Fortunately, in our patient there were no signs of septic status, mediastinitis, or empyema in spite of severe lung abscess formation. We speculated that the reason for lung abscess formation without a recognizable mediastinitis is that the esophagus was tightly adhered to the adjacent lung parenchyma in the early stage, or had already formed adherence in the past. Then the impacted denture was drawn into the lung parenchyma with the negative pressure of the thoracic cavity. Thanks to these favorable conditions, the operation and postoperative management were successful.

References

Conservative Management of Intraoperative Tracheal Injury During Cardiac Operations
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Iatrogenic intraoperative tracheal injuries are rare in cardiac operations. Management of this complication is not well described because of the low incidence and lack of reported cases. We present an 82-year-old woman who sustained a tracheal injury during aortic valve replacement. Soft tissue coverage of the trachea was obtained, the original cardiac operation was completed, and she was otherwise managed conservatively. She recovered without further complication and was discharged home 1 week after the surgical procedure.

Tracheal injury during cardiac operations is a very rare complication, with only a few cases reported in the literature [1, 2]. Management of this condition is not well described because of its rarity. We present an elderly woman who underwent an aortic valve replacement and had an iatrogenic injury that resulted in a full-thickness defect in the anterior wall of the trachea.

An 82-year-old woman with a 1-year history of progressive fatigue was diagnosed with severe aortic stenosis (aortic valve area, 0.8 cm²) and presented for aortic valve replacement. The patient was taken to the operating room, and intubation with a 7.5-mm endotracheal tube, which was secured at 23 cm at the level of the incisors, was uneventful. After median sternotomy was performed, several air bubbles were seen in the surgical field at the superior mediastinum. There was no identifiable air leak on the ventilator circuit, and there was no difficulty oxygenating or ventilating the patient. Careful inspection revealed a 1-cm longitudinal tear on the anterior trachea. The tracheal defect included part of 2 adjacent tracheal rings and the...