A rare complication of esophageal dilatation: Brain abscess

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Abstract

Brain abscess is an uncommon serious disease, which has been reported as a rare complication of repeated esophageal dilations; however, routine periprocedural antibiotic prophylaxis is not currently recommended. Herein, we present a brain abscess that developed after esophageal dilatation for the treatment of induced caustic esophageal strictures. The clinical presentation is non-specific, the most reported signs are high fever and neurologic findings. Cases have been reported in the literature in adult and pediatric patients. Cranial imaging is essential for diagnosis, drainage and antibiotics are essential in its treatment. Clinical improvement was achieved with antibiotic therapy and surgical drainage. This serious complication should be kept in mind when treatment of corrosive strictures though repeated esophageal dilatation is planned and prophylaxis should be considered in selected patients. (Turk Pediatri Ars 2017; 52: 50-2)

Keywords: Brain abscess, children, esophageal dilatation

Introduction

Intake of caustic substances may lead to serious injury in the esophagus and stomach, and is the main cause of acquired esophageal strictures in children. In treatment, the first-line therapy is dilatation with a balloon or bougie. If no response is obtained, surgical intervention is performed. Perforation, hemorrhage, sepsis, and rarely abscess may develop as a complication of dilatation. Mediastinal and paraesophageal abscess is observed frequently, and brain abscess and epidural abscess have been reported rarely in both children and adults (1). Here, we aimed to draw attention to a rare complication of endoscopic balloon dilatation by presenting a patient who developed brain abscess following repeated esophageal balloon dilatations.

Case

An eight-year-old male patient presented to the emergency department with generalized tonic clonic convulsion. In his history, it was learned that repeated esophageal balloon dilatations (the last one was performed 2 weeks ago) had been performed because of esophageal

stricture, which developed following intake of nitric acid (porçöz) four years ago, and the patient was being fed through a gastrostomy catheter. On physical examination, the body temperature was found as 36.8°C, diffuse aphthous lesions were present in the mouth, somnolence was present, bilateral light reflexes were positive, deep tendon reflexes were normoactive, and pathologic reflex was absent. A gastrostomy catheter was present in the abdomen. Other systemic examination findings were found as normal. In laboratory tests, routine biochemical variables were found as normal and acute-phase markers were found as negative. A mass lesion with a diameter of 17x20 mm compatible with brain abscess was found in the anterior part of the right temporal lobe on non-contrast computerized brain tomography (CBT) (Figure 1a). On contrast-enhanced brain magnetic resonance imaging (MRI), a 2-cm lesion compatible with abscess was present in the same location (Figure 1b). Urgent surgical intervention was planned by neurosurgery, but the operation was postponed because general anesthesia was not considered appropriate owing to the presence of oral candidiasis. Blood samples for blood culture were obtained and vancomycin, cefotaxim, and metronidazole treatment directed

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Figure 1. a-c. Image of abscess in the right temporal region on non-contrast computerized tomography (a), an area compatible with abscess with contrast enhancement in the right temporal region on contrast-enhanced brain magnetic resonance imaging (b), normal appearance on postoperative follow-up contrast-enhanced brain magnetic resonance imaging (c)

to potential agents and oral care with mycostatin were initiated. In the investigations performed in terms of abscess focus, echocardiography, contrast-enhanced thoracic tomography, and abdominal ultrasonography were found normal. The patient underwent surgery on the 12th day of treatment after obtaining approval from the anesthesia department and no complications occurred. Abscess culture and fungus culture of the samples obtained during the operation were negative and this was thought to be related with administration of antibiotics in the preoperative period. On the follow-up contrast-enhanced brain MRI performed in the postoperative period, minimal edema in the parenchyma was observed around the relevant area and no residue was found (Figure 1c). Antibiotherapy was completed to 21 days and the patient's nutrition was regulated. He was discharged with recovery. Written informed consent was obtained from the patient's relatives.

Discussion

Esophageal injuries related with intake of caustic substances are the main reason of esophageal strictures and esophageal dilatations in children (2). Application of dilatation with a balloon or bougie is the most commonly preferred treatment method. Bacteremia related with *Streptococcus viridans* may be observed in 22-72% of dilatations (3-5). Oropharyngeal and esophageal bacterial translocation and related bacteremia are observed frequently following dilatation of stricture. Brain abscess has been reported rarely and is a life-threatening complication. Seven pediatric cases and five adult cases have been reported in the literature. A brain abscess that developed after esophageal dilatation performed because of stricture was presented in a patient

aged 2 years by Hofmeyr et al. (6) and in a patient aged 67 years by Van Even et al. (7). These authors discussed this rare complication. A 6-year-old patient who had undergone repeated esophageal dilatations because of intake of corrosive substance and was fed via a gastrostomy reported by Erşahin et al. (8) presented with seizure and clouding of consciousness and was diagnosed as having a brain abscess, like our patient. The clinical picture in brain abscess is not specific and the prognosis is satisfactory with early diagnosis and treatment. Antibiotic prophylaxis is recommended in patients with immunosuppression and with a history of bacteremia following esophageal dilatation (5). Endoscopic lavage with antiseptic solution or saline solution before dilatation, regular antifungal use, specification of the patient's flora and throat culture at the time of presentation to administer appropriate antibiotic prophylaxis are recommended to decrease the frequency of bacteremia following dilatation (9). It was found that administration of clindamycin for oral decontamination was not efficient in decreasing the frequency of bacteremia (10). In conclusion, physicians should keep in mind that brain abscess is a potential complication of esophageal dilatation in patients with esophageal stricture. Patients should be informed about this rare complication before intervention and prophylaxis should be performed in selected cases, if necessary.

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