

FISH BONE AS A CAUSE OF RETROPHARYNGEAL ABSCESS

CERENSKÁ KRISTINA, HAJTMAN ANDREJ, CALKOVSKÝ VLADIMÍR, HANZEL PAVEL

Clinic of Otorhinolaryngology and Head and Neck Surgery, Jessenius Faculty of Medicine,
Comenius University and University Hospital, Martin, Slovakia

Abstract

In this work, we describe the case of a 68-year-old female patient with an injury to the back wall of the pharynx by a foreign body and its atypical placement in the retropharyngeal space, causing a retropharyngeal abscess. The foreign body was extracted during a transorally direct pharyngolaryngoscopy under general anesthesia. The symptomatology, diagnosis, and therapy of retropharyngeal abscess are the topics of discussion. We emphasize the necessity of timely and thorough localization of the foreign body and its extraction.

Key words: Retropharyngeal abscess, Foreign body, Lymphadenitis, Odynophagia

INTRODUCTION

The retropharyngeal space is located between the back wall of the pharynx, the front wall of the cervical spine, and extends from the base of the skull to the mediastinum. Due to its anatomical relationship to many structures, it can cause the infection to spread to the deep cervical and interthoracic spaces. The most common pathogens are *Streptococcus pyogenes*, *Staphylococcus aureus*, *Streptococcus pneumoniae*, and anaerobes. The disability is mostly paramedian and unilateral (1). The result of the inflammatory process is a retropharyngeal abscess. This is a deep throat infection that typically occurs in children between the ages of 2. and 4. year of life, most often on the basis of an abscessing lymphadenitis and after a previous infection of the upper respiratory tract. The retropharyngeal nodes often swell to the point of abscessing and can be seen as a paramedian bulge on the back wall of the pharynx /see fig.1/. Its symptoms are very similar to epiglottitis. The symptoms are dominated by fever, odynophagia, stridor, and torticollis (2). Other symptoms are headache, shortness of breath, loss of appetite, otalgia, adenopathy. A child often comes with a picture of sepsis of unclear etiology, or with symptoms of toxic laryngitis (2).

Corresponding author: MUDr. Kristína Čerenská; e-mail: kikiacik@gmail.com

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Fig. 1 CT scan of sagittal section: prevertebral soft tissue swelling with a fish bone – arrow

The incidence of retropharyngeal abscess in the adult population is lower compared to children. A foreign body can also be the cause of a retropharyngeal abscess. Foreign bodies are inorganic (needles, pins, parts of toys, dentures, etc.) or organic (fish bones, vegetables and other parts of food, etc.) (3). After ingestion, the fish bone usually gets stuck in the tissue of the tonsils, root of the tongue, valleculae, or in the side wall of the pharynx, where it subsequently causes sensations of a foreign body, pricking, scratching in the throat, or localized pain. If it is recognized late, it causes a chronic inflammation and rarely causes a deep throat infection (1). The danger of a retropharyngeal abscess lies in the obstruction of the airways, in the spread of the infection to the mediastinum with the development of mediastinitis, and a septic state. Other possible complications are aspiration pneumonia, epiglottitis, meningitis, necrotizing fasciitis, pericarditis, pyopneumothorax, and others (4). The diagnostic standard in a patient with a suspected retropharyngeal abscess is history, physical examination, and imaging methods. An ultrasound of the neck, or a CT or MRI examination is used. CT and MRI are able to accurately localize the abscess, including potential complications such as venous thrombosis (5). The basis of the treatment is surgical drainage, administration of broad-spectrum antibiotics, analgesics, antipyretics, and monitoring of airway patency or securing it by orotracheal intubation/tracheostomy (6).

CASE HISTORY

In our work, we describe the case of a 68-year-old female patient who had a history of swallowing a fish bone during the Christmas period and, due to a persistent scratchy feeling in her throat and drooling, consulted an otorhinolaryngologist, who did not find a foreign

body during the examination. Her difficulties subsided over time, and after about a month she consulted a general practitioner due to difficulty in swallowing and pain in her throat. She was taking Klacid 500 every 24 hours, despite this, her clinical condition worsened. She was subsequently treated by an outpatient otorhinolaryngologist, who suspected a retropharyngeal abscess. He sent the patient to a local hospital, where Clindamycin, Dexamethasone + Dithiaden was administered intravenously, and she was immediately transferred to our clinic. Based on the CT examination, we found an atypically located retropharyngeal abscess, practically in the middle plane, starting from the level of the tongue, spreading caudally to the left, skeletotopically to the level of C3-4, the vertebrae were without visible lesions. Under general anesthesia, we performed a direct pharyngolaryngoscopy with confirmation of an inflammatory focus. We identified a palpable soft arching approximately at the level of the upper third of the flap in the midline, after pressing, purulent contents spontaneously flowed out, from which we took a swab for bacteriological examination. We performed a wide incision and drainage of the abscess. Due to the risk of a possible postoperative swelling and suffocation with the impossibility of per os intake, we subsequently performed a tracheostomy and introduced a nasogastric tube. The operation went without complications. Postoperatively, due to subjective persistent problems, we completed a control CT examination of the neck and chest /see fig.2/, where a residual abscess collection of the retropharynx was confirmed in the form of a streak with a discrete suspicious foreign body. A small seepage was detected around the tracheostomy cannula and the fat of the upper mediastinum, where suspicious inflammatory changes were identified without confirmation of an abscess.

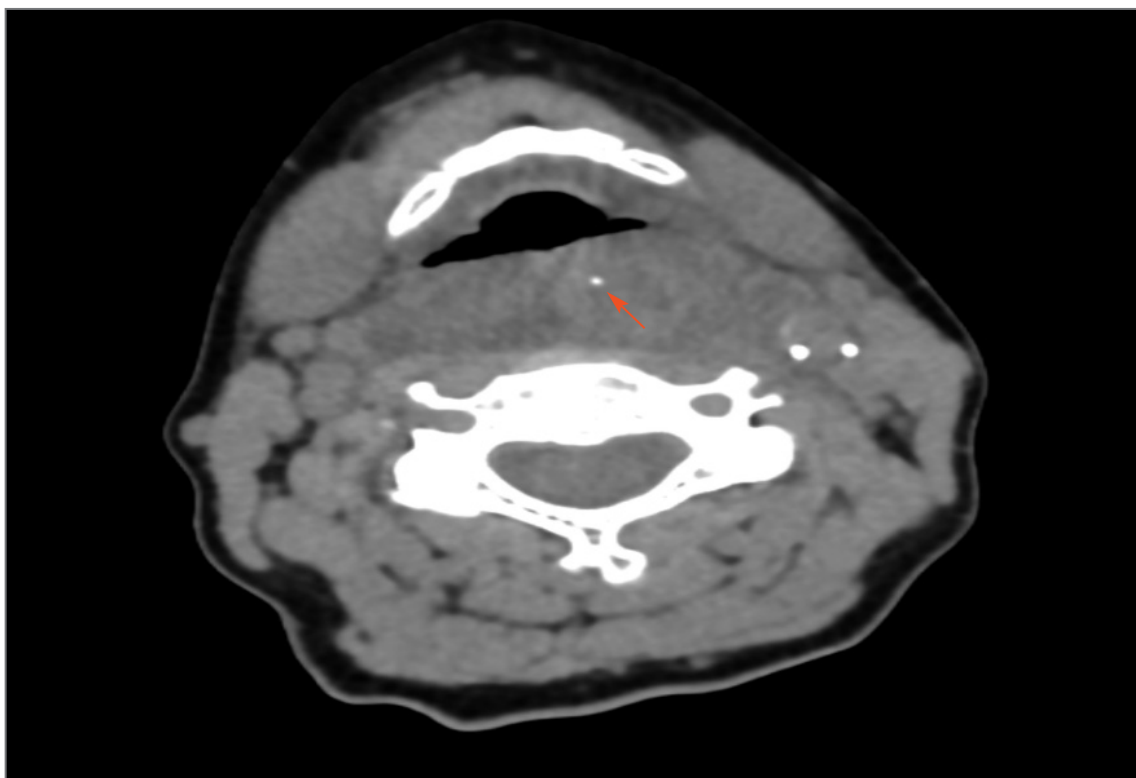


Fig. 2 CT scan, axial section, foreign body – fish bone 15 mm – arrow

During the revision operation, we removed the fibrin coating in the place of the original incision with a Kleinsasser laryngoscope. We dilated the incision and revised the soft tissues up to the prevertebral fascia – in depth we identified the foreign body described according to the CT scan (approx. 15 mm long thin fish bone), which we removed /see fig. 3/. We did not find purulent content, we only aspirated a minimal amount of calcified content. Initially, in the laboratory parameters, significant leukocytosis and elevation of C-reactive protein. Doses of antibiotics (Clindamycin 600 mg IV every 8 hours and Metronidazole 500 mg IV every 12 hours) were not changed during the hospitalization, they corresponded to the culture findings. Postoperatively, the laboratory parameters are adjusted, the subjective problems subsided. On the 5th postoperative day, we extracted the nasogastric tube. The process of realimentation per os was without difficulties. We decannulated the patient on the 6th postoperative day – without breathing difficulties. In a stabilized condition, we discharged the patient to outpatient care on the 8th postoperative day.

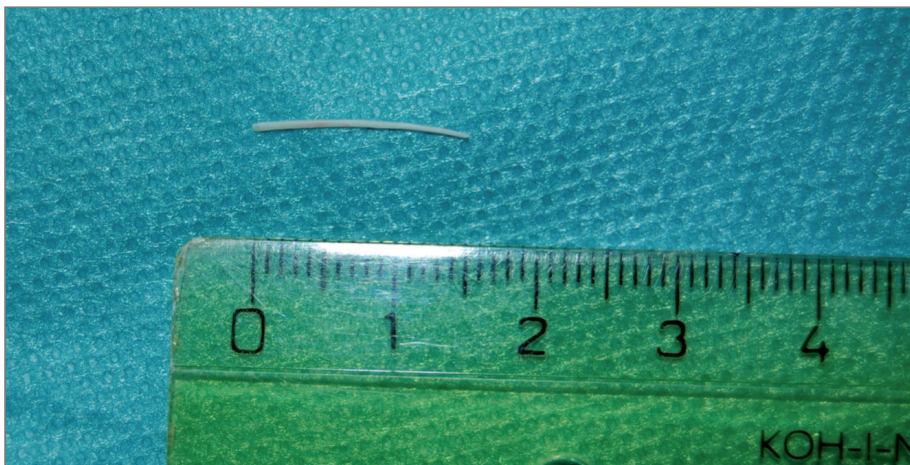


Fig. 3 Foreign body – fish bone 15 mm

DISCUSSION

As otorhinolaryngologists, we come into contact with foreign bodies most often after their ingestion or traumatic penetration. After ingestion, the fish bone usually gets stuck in the tissue of the tonsils, root of the tongue, valleculae, or in the side wall of the pharynx, where it subsequently causes sensations of a foreign body, pricking, scratching in the throat, or localized pain (1). In the case of our patient, a foreign body stuck atypically in the area of the retropharynx and caused an abscess collection. The diagnosis of foreign bodies is important, so do not underestimate the situation and perform an imaging examination, or repeat it in case of an ambiguous result. It will reveal the exact location and help assess which anatomical structures are affected. CT examination is better available in our country, but NMR can also be used. Foreign bodies are often metallic, plastic, glass and are easily detected by X-ray (5). A foreign body made of wooden material can sometimes escape our attention because it is of lower density and because gas bubbles form around it (6). In open injuries, NMR examination is controversial because of the possible occurrence of metallic foreign bodies. In the mentioned literature, in some cases, a foreign bodies – metal fragments smaller than 1x1 mm – were not shown on the CT examination (7). Some authors also use angiographic methods when there is no clarity of vascular involvement and the risk of major bleeding. In the patient we presented, the diagnosis was established on the basis of a clinical suspicion (persistent lymphadenopathy of the neck, dysphagia, odynophagia),

physical examination, and CT of the neck and chest with contrast. The foreign body must always be removed completely, including its particles. There may be chronic inflammation, recurrences with fistulation and suppuration, or the formation of inflammatory granulomas (5,8). When extracting foreign bodies, the correct operative approach is important. We consider the size, extent, location, type of material of the foreign body, and possible complications. We choose an approach that can remove a complex foreign body and we also consider mini-invasiveness (9). However, foreign bodies made of organic material are often fragile and their complete extraction is more difficult compared to e.g. with metal material (6,12). Operations in the stage of acute inflammatory manifestations should be performed under the cover of antibiotics (10). If an abscess is not formed and there are signs of cellulitis, conservative treatment is sufficient. We choose antibiotics with sensitivity to gram-positive bacteria and anaerobes, i.e. clindamycin, cephalosporins II-III. generation or potentized aminopenicillins. (1.11) When the surgical intervention is delayed, there is a risk of infection penetrating from the retropharyngeal space into other spaces ("danger space", parapharynx, mediastinum) with the risk of fatal complications (3). In the case presented by us, the initial foreign body was not expected due to the atypical localization at the site of the abscess collection, and it was not possible to immediately identify the fish bone. On the basis of persistent clinical problems and elevated inflammatory parameters in the laboratory, we added control CT scans of the neck and chest. A residual abscess collection of the retropharynx with a foreign body and subsequent revision surgery is described here. In our patient, the foreign body was accessible due to its atypical placement, with good visualization and manipulation, sufficient control of possible bleeding, and inspection after the removal of the body. As part of the surgical treatment, we primarily chose a transoral approach for the diagnosed abscess, as in tonsillectomy, or using instrumentation for mini-invasive surgery of head and neck tumors. Some authors choose an external approach as safer and more beneficial. Dissection begins at the front edge of the rocker into the parapharyngeal space and can continue directly to the vertebral bodies into the retropharyngeal or prevertebral space (1).

According to the Czech authors, the transoral approach can be used in the absence of signs of parapharyngeal spread. The incision should be wide enough to drain and below the apex of the arch to avoid creating a pocket with the possibility of secretion retention (1). Surgical drainage of an abscess through an external approach involves a wide opening of the fascial spaces of the abscess cavity, identification of the major jugular vessels and their control, drainage of all separated abscess pockets, irrigation of the wound, and insertion of wide tubular drains (1). We always take material for bacteriological examination. Depending on the extent of the finding, they eventually introduce a nasogastric tube to ensure postoperative nutrition (13). Therefore, the external approach should be used in case of extensive infections with a spread to the parapharyngeal space or mediastinum or an oppression of the respiratory tract. Secure the elector's airway in case of shortness of breath. Exceptionally, only intravenous antibiotics are used in the treatment of retropharyngeal abscesses and are not identified with this procedure (1). In the Austrian literature, transoral is chosen as the primary approach. They also recommend an external approach when the abscess spreads to other spaces ("danger space", parapharynx, mediastinum) or in case of complications. For larger abscesses, food intake must be ensured using a nasogastric tube. Good visualization is necessary during the procedure and also hemostasis after the extraction (11). At our workplace, according to the clinical findings, we also indicated the securing of the airways using a tracheostomy. The mentioned authors consider this procedure in the case of shortness of breath. Bleeding from large vessels, or the risk of fatal complications, is also a feared complication (14). Postoperatively, inflammatory complications may occur, which may be local or general. Among the most feared are mediastinitis or the development of a septic condition. Other possible complications are aspiration pneumonia, epiglottitis, meningitis, necrotizing fasciitis, pericarditis, pyopneumothorax, and others (4,13). Therefore, it is important to consult a thoracic surgeon. Due to the absence of an abscess in the chest cavity, our patient's case did not require a collar mediastinotomy.

CONCLUSION

Traumatic penetration of a foreign body into the retropharyngeal space is rare for otorhinolaryngologists. Diagnostics using imaging examinations to determine the size and location of the foreign body, as well as possible inflammatory complications in the area of the neck and mediastinum, as in our case report, is important. We always choose the surgical approach to remove the foreign body in such a way that a complete extraction is possible. Subsequently, we consider the mini-invasiveness of the surgical procedure while keeping in mind the possibility of bleeding, so we choose an approach with good visualization. We try to prevent damage to important anatomical structures and prevent postoperative complications. It is necessary to think about this diagnosis especially in the framework of differential diagnosis. In addition to the occurrence of a foreign body in this area, other causes of diseases such as injuries, developmental or tumor diseases should be considered (2).

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