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DESCENDING NECROTIZING MEDIASTINITIS COMPLICATING CERVICO-FACIAL CELLULITIS OF DENTAL GATEWAY.

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Abstract:-

Mediastinitis during cervical cellulitis results from the extension of the cervical infectious process to the mediastinum. This cervico-mediastinal dissemination is favored by the anatomical continuity that exists between these two regions.
The Anglo-Saxon nomenclature attributed the name of descending mediastinitis exclusively to this type of mediastinitis. The dental origin of cellulite is identified by most studies as a factor promoting the extension to the mediastinum especially when the second or third molars are infected.
The initial clinical picture is sometimes poor and can lead to a diagnosis delay. The key examination is cervical CT scan and thoracic CTscan injected. The treatment consists of large and repeated tissue excisions combined with antibiotic therapy directed against the anaerobic and aerobic germs. We report the case a young, immunocompetent patient with cervical cellulitis of dental origin complicated by anterior and posterior mediastinitis.

Key words: *dental abscesses, cervicofacial cellulitis, dysphagia, mediastinitis, drainage, anerobic germs*

INTRODUCTON:

Cervical cellulitis is a soft tissue infection, polymicrobial, developed from a dental or cervical focus, the main risk if it is not recognized early is the rapid spread of the infectious process to the mediastinum due to The absence of an anatomical barrier between these two regions, and the virulence of the germs in question, explain the seriousness of this pathology [1].

CASE REPORT: It is a young patient of 22 years, without significant pathological antecedents, who presented following dental pains and taking non-steroidal antiinflammatory, a swelling of the left cheek and an ipsilateral sub-mandibular induration, with dysphagia to solids.

The patient was hospitalized in a provincial hospital, several combinations of broad-spectrum antibiotics were administered, with corticosteroid injections, without any improvement, in a feverish context and an alteration of the general condition.

He was admitted to ENT emergencies, clinical examination revealed a swelling of the left cheek with trismus to 1 centimeter and a left sub-mandibular swelling, a discrete induration on the lateral side of the neck, a heart rate of 93 beats / min and a PA at 110/70 mmHg. The dental examination found an abscess of tooth 37, with discharge of pus.

The respiratory state was normal: respiratory rate 22 cycles / min, a 96% SaO2 in the ambient air, a fever at 39 °. The initial biological assessment shows a leukocytosis at 40 000, a CRP at 400 mg / l and a glycemia at 0.93 g / l, the HIV serology is negative.

Cervico-thoracic CT scan revealed multiple sub-mandibular, sublingual, parapharyngeal, and retropharyngeal abscesses with fistulization in the aero-digestive tract, which is repressed to the right; abscess of anterior and posterior mediastins with associated mediastinitis. Figure (1, 2, 3)

Fig 1: presence of sub mandibular, sub-lingual, para and retropharyngeal collections

Fig 2: Retropharyngeal collection with mediastinal fistulization

Fig 3: anterior and posterior mediastinal collections

The patient was hospitalized in the intensive care unit, using Ceftriaxon 2g / day, and metronidazole 1.5g / day and gentamycin 160mg / day.

Under general anesthesia, endo-oral drainage of facial and peritonsillar abscess was performed, followed by transverse cervicotomy, which allowed drainage by descending laminae.
A thoracotomy was performed to drain the deep collections at the anterior and posterior mediastinum.
In the course of the draining of cellulite, the extraction of the tooth causal was carried out. Complementary treatment of the oral cavity has been necessary to prevent any further infectious episodes similar.
Direct examination finds BGNs. The CRP decreased after 48 hours of the surgical procedure, with good clinical improvement after one week.

DISCUSSION:
The diffusion of infection in the mediastinum is along the cervical fascia which contains three deep layers and which divides the neck into several virtual spaces such as the pre-tracheal, perivascular, parapharyngeal and retropharyngeal space that can serve as a gateway into the mediastinum [2].
From an infectious focus (tonsillitis, sub-angulo-maxillary phlegmon, etc.) the infection reaches the lateral cervical spaces: the retrovisceral space (71% of cases), the perivascular space (21% of cases) and peritracheal space (8% of cases) [3].
The retrovisceral space of Henke ends with a cul-de-sac in the mediastin posterosuperieur right, place of predilection of purulent collections. When the infection has crossed the cervicothoracic defile, the collections gain the mediastinal spaces, thus breaking the high mediastinum resulting in a pyothorax or a pyopneumothorax, sometimes with parenchymal lesions to type of pulmonary abscess. The pericardium is most often the seat of a reactive aseptic effusion but it can become purulent [3]. The necrotic fluids can diffuse into the retroperitoneal space, causing peritonitis if the posterior peritoneum barrier breaks [8]. The major risk of this cellulitis in its cervical or mediastinal location is vascular ulceration with rupture and fatal hemorrhage or possibly arteriovenous fistula, such as aortopulmonary fistula described by Economopoulos et al [4].
Alcoholism, diabetes, neoplastic pathologies, the use of non-steroidal anti-inflammatory drugs or corticosteroids are the classic risk factors for immunosuppression. Patients are often hospitalized for persistent pain after tooth extraction or the sensation of oropharyngeal mass, sometimes as early as the stage of complications for dyspnea or dysphagia and deterioration of the general condition [1].
The clinical examination is often initially poor but may find edema or cervical erythema in a context of fever. The neck then becomes red, tense and painful. The presence of crackles signs the production of gas. The examination should look for signs of extension: dysphagia and laryngeal dyspnea which signals an impact on the upper airways. The general state can be preserved for a long time and suddenly deteriorate.
The biological assessment finds a nonspecific inflammatory syndrome. The injected cervicothoracic CT scan, carried out as early as possible, is the means of locating and extending the collection. The injection is done in the left superior cave territory in order to opacify the brachiocephalic trunk. This examination looks for: the starting point of the infection: dental or pharyngeal and signs of soft tissue involvement: infiltration of tissues, collections, presence of gas, thus guiding the choice of the appropriate surgical approaches as well as postoperative monitoring.

The bacterial flora observed in mediastinitis is a polymicrobial flora made of aerobic and anaerobic germs, Group 3 streptococci milleri (anginosus, constellatus, intermedius), pyogenic streptococci and some staphylococci aureus or coagulase negative and Prevotella X1 are mainly found [5].

Antibiotic treatment should be started immediately and be large enough to cover Grampositive cocci, Gram-negative bacilli, and anaerobic bacteria. Several empirical regimens, such as piperacillin - tazobactam and vancomycin, and clindamycin associated with ceftriaxone or carbapenems have been described in published reports [6, 7].

It is suggested that in cases of descending mediatinitis complicated by streptococcal toxic shock syndrome, the use of protein synthesis inhibitors such as clindamycin is more effective than penicillin [8].

Antibiotic therapy should be adapted according to the culture results and the antiobiogram. The duration of i.v. antibiotic therapy would last at least 7 to 10 days [8]. The culture should be practiced not only before treatment, but also during the clinical course, as there may be growth of antibiotic-resistant bacteria with open wounds.
Once the origin is identified, the management of the initial infection should be done. Extraction of the tooth, removal of the foreign body and drainage of the retropharyngeal abscess by intraoral incision can be considered. The infectious focus is approached by a large cervical incision and the mediastinum is drained according to the extension of the infection by slides from the cervicotomy, sternotomy or thoracotomy when the collections are deeper [9].

A decade ago, Nakamori et al. reported percutaneous drainage efficiency by catheter in a new treatment of mediastinitis. This technique is superior in terms of pain control, the prevention of secondary infection of the operative site, by bacteria resistant to antibiotics.

Although some have questioned the reliability of the diagnosis of mediastinitis without surgical exploration and the debridement of necrotic tissue, with this less invasive technique, in his study mortality with their method is promising (0%) [10].

Healing with Negative Pressure Wound Therapy would be an interesting alternative to conventional wet or calcium alginate, silver or hydrocolloid dressing. These occlusive dressings, allow better healing of the surgical site and a reduction in the nursing workload by allowing a change of dressing every 48 to 72 hours instead of several times a day. These dressings are not set up initially when used in necrotizing fasciitis but only after several days of conventional dressings, which ensures that the infection is cured and that any necrotic tissue has been excised [11].
Complications include upper respiratory tract, jugular vein thrombosis, Lemierre syndrome [12], septic shock, erosion and carotid artery rupture, empyema and broncho-cavitary fistula.

CONCLUSION: The clinical presentation of cervicofacial cellulitis can sometimes underestimate the extent of infection, including mediastinal spread in the absence of treatment, especially when extending below the aortic arch, increases mortality and average length of stay.

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