TREATMENT OF DIFFUSE INFLAMMATION IN THE JAW AREA: MULTIPLY 2 CLINICAL CASES LUDWIG' ANGINA - CASES REPORT

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ABSTRACT

Target: Analyze the factors related to the treatment results of diffuse facial inflammation through 2 cases to draw experience in diagnosis and management attitude. **Objects - Methods:** 2 patients diagnosed with diffuse inflammation in the jaw area were treated at the Faculty of Facial Surgery and Plastic - 108 Centre Military Hospital on December 2019. Method: Description of a cluster of diseases. **Results - Discussion:** Diagnosis of diffuse inflammation in the jaw area is based on clinical and imaging diagnosis. Diagnostic imaging methods can use ultrasound, computed tomography, magnetic resonance. Computer tomography is often used because of the rapid duration of the scan, assessment of soft inflammatory lesions, and to assess bone and tooth damage. Computerized tomography image said: (1) edema of the organization, the location, size of purulent foci, the direction of spread of inflammation, the appearance of air bubbles in the organization; (2) degree of tamponade of the airway; (3) condition of inflammation spread to the mediastinum, pleura; (4) the source of the infection can be teeth. Diffuse inflammation in the jaw area progresses rapidly, with a high risk of death. Treatment should be aggressive, comprehensive based on factors: early diagnosis, airway control, adequate purulent drainage enlargement surgery, high-dose antibiotics, cause tooth extraction. **Conclude:** Diffuse inflammation in the jaw area is an emergency disease, need early diagnosis and surgery, incision to remove the pus satisfactorily at the beginning, Combined with systemic antibiotics, treatment for other associated systemic disorders will bring good results, shorten treatment time, reduce the number of surgeries as well as treatment costs, reduce the risk of death.

Keywords: *Inflammation spread in the jaw of the face.*

I. QUESTION

Diffuse inflammation of the oral floor was first described by Karl Friedrich Wilhelm von Ludwig in 1836 with state of necrotizing cellulitis progresses rapidly in oral cavity and neck area. Diffuse inflammation in the mouth floor was first described by Karl Friedrich Wilhelm von Ludwig in 1836 with rapidly progressing necrotic cellulitis in the oral cavity and neck area. According to the literature, 90% cases of maxillofacial region inflammatory disease is caused by tooth, of which 2/3 comes from necrotic tooth marrow inflammation. Bacterial agents can be caused by a combination of one or more types, both anaerobic and anaerobic. Bacteria and their toxins penetrate through the root apical to cause inflammation around the tooth, jawbone and periosteal. Infection spreads in directions to the oral cavity, the facial and neck tissue spaces, and spreads to the adjacent anatomical spaces via direct route or via blood, lymphatic lines, along the axon sheath nerve. The disease progresses rapidly due to strong bacterial toxins and decreased body resistance, threatening death due to

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asphyxiation, pneumonia, mediastinal inflammation, pleural pus, septic shock [5]. We report 2 clinical cases treated at the Faculty of Facial Surgery and Plastic, 108 Centre Military Hospital with a diagnosis of diffuse inflammation of the oral floor. Through these 2 clinical cases, we want to report on the effectiveness of treatment when the diagnosis and proper management or delay in time will lead to different treatment results.

II. OBJECT - METHOD: CLINICAL CASE REPORT

2.1. Object: 2 cases were treated at the Faculty of Facial Surgery and Plastic, 108 Centre Military Hospital on December 2019. The final diagnosis of both cases was diffuse inflammation of the oral floor, 2 sided neck due to teeth, in which 1 initial case was not diagnosed as diffuse inflammatory but a tooth abscess, so the attitude of treatment did not follow diffuse inflammatory treatment regimen in the first 3 days; therefore, the duration of treatment as well as the total number of surgeries of patient diagnosed with abscesses is more than twice as long as those who were correctly diagnosed from the start and treated according to diffuse inflammatory protocol.

2.2. Method:

Describe the clinical symptoms, subclinical, diagnostic, surgical methods.

Monitoring, evaluating progression of injury status of each case. Compare treatment results.

III. RESULT

3.1. Clinical case 1

A 64-year-old male patient with a history of type 2 diabetes is regularly treated. The patient presented symptoms of upper left jaw pain and fever 4 days before admission, self-treated with antibiotics that did not improve, and went to the hospital for examination and treatment.

Body condition: Awake, good contact, pink mucosa. Circuit 83 times/minute, blood pressure 145/80mmHg, temperature 37.80 C, breathing frequency 20 cycles/minute. No symptoms of dry mouth dirty tongue of infection syndrome.

Spot: Swelling, tension, congestion in the lower jaw area, under the chin, neck, face 2 sides, tongue is pushed back slightly. Teeth 27, 28 are shaken at degree 2, Gums of red masonry, with pus flowing through the gums.

+ Test: BC: 11.89 G/L, NEU: 81,8 % (move left)

Blood sugar: 11.86 mmol/l

+ Ultrasound: edema spread left cheek area, c with mixed sound block size 23x22mm, in heterogeneous fluid, many enlarged angular lymph nodes.

Diagnosis: Left jaw abscess due to tooth 27,28 / Type 2 diabetes.

Treatment: use antibiotics, control blood sugar with oral medications. Evolutions after 2 days of medical treatment showed that clinical symptoms worsened rapidly, swelling radiates to the neck, the patient feels short of breath. Ultrasound has images of many muffler drives, left cheek area 26x19mm, left ear gland 32x17mm, left jaw angle 33x10mm, Besides, there are also many lymph nodes in the lower jaw and left neck.

Surgical treatment: Conducting the first surgery: Wide incision under the jaw line and extractions 37 (due to broken crowns, shaky much, with pseudococcus around). Because the surgeon is not very experienced, the left jaw cut 10 cm on the left jaw is not enough to drain the pus, so after 5 days the inflamed area spreads down the neck, Pus has a bad odor and a lot, ultrasound images of pus loot from the left neck area spreading to the left chest. Conducting 2nd surgery: continue to make wide incision incision under the left jaw to remove pus, extraction of the cause of teeth 2.7, 2.8, cut jaw line below, Install pump infusion line for continuous rinsing. The amount of pus has decreased but not significantly, The inflammatory cavity continued to spread so the patient had to undergo four more surgery to remove the necrosis. ***6th surgery***, stable condition of the oral floor, neck, face, however, the left shoulder area still has a lot of fluid due to pus flowing along the muscle grooves, causing fluid accumulation in the shoulder-back region spreading to the spine, Patients were placed VAC shoulder neck to clean. 20 days after the first incision to remove pus, the patient had surgery to close the skin incisions, and had to undergo 2 new surgeries to close all the incisions.

Total number of surgeries in the whole treatment course is 8 times.

Evolutions body after surgery:

We have used empirical antibiotics in the absence of antibiotic regimens. Selection of antibiotics for the treatment of Gram-negative and Gram-positive, anaerobic and aerobic bacteria; When there is an antibiotic according to the regimen, use the antibiotic regimen.

We have tests to assess blood sugar, liver function, kidney, electrolytes, daily blood count, ultrasound for spot assessment when needed to assess inflammation in the spot. Although when the patient was admitted to the hospital, the patient's whole state did not have many disorders, but after the surgery it was complicated, there were many systemic disorders.

Patient with consistently high blood sugar, when entry was 11.89mmol/l, was adjusted with oral medication and followed by appropriate insulin dose adjustment; At the same time, to coordinate strict dietary adjustments for diabetics. During treatment, there are days when using milk for diabetics still causes hyperglycemia, so we have to switch to other nutritional products to minimize sugar intake to control blood sugar in the body normal limit.

On the 5th day after surgery, the patient develops anemia and should receive blood transfusion. We have infused red blood cell mass and fresh plasma (total treatment is 1200 ml red blood cell mass, 750 ml fresh plasma).

When a patient is placed constantly wash pump, there was symptom of a decrease in blood albumin, and an albumin infusion was given (The total is Aminoplasma 5% x 7000ml, Aminoplasma 10% x 2000ml)

The total time of hospitalization is 45 days with 8 surgeries, after surgery, the patient is discharged from the hospital in a stable state of the whole body and spot.

Condition of injury after 6 times of surgery and prepare the 1st close stitching.

3.2. Clinical case 2

The male patient, 63 years old, healthy history. The patient appeared swollen many sides of the face on both sides on day 4, difficult to open his mouth, difficulty swallowing, mild difficulty breathing, fistula in the right cheek, did not help antibiotic treatment by himself, visited the maxillofacial surgery faculty of 108 Centre Military Hospital.

Body condition: conscious, touchable, infectious, dry lips, dirty tongue. Circuit 100 times/minute, blood pressure 105/60mmHg, temperature 38.80 C, breathing frequency 28 cycles/minute. In the neck and face area: Swelling, tension, congestion in the eye - cheek area - under the right jaw; swelling under chin, neck 2 sides, tongue is pushed back slightly. The right cheek area has a white pus leak point of 0.5x0.5cm, opaque, foul-smelling fluid. Limit your mouth open and Open your mouth up to 1cm.

+ Test:BC: 14.48 G/L, NEU: 79,2 % (move left)

Blood sugar: 6,73 mmol/l

+ Ultrasound: Right cheek has an outbreak of 29x35mm in size, with many walls. The soft parts of the right cheek and neck are edema, Right angle of the jaw has an inflammatory outbreak with dimensions of 36x50mm, echogenic fluid properties have multiple walls.

+ CT of the face of the face (with contrast injection): image of a large abscess strip in the right neck area, spreading to the mediastinum (Size 6.8x11.6x18cm), override and push the oropharynx to the left, Attached is a picture of some small air cells in the right-neck software.

Diagnosis: diffuse inflammatory inflammation in the cheeks - lower jaw - right neck due to teeth 4.7 day 5.

Treatment: After 3 hours of diagnostic test and preparation, the patient is taken to emergency surgery to incision removing purulent abscess of the neck and face area. Incision the skin in 2 positions: 1st incision under the jaw shore, from the right corner of the jaw to the left corner of the jaw; 2nd incision at right neck base (about 10cm). Examination shows that the inflammation spreads in many directions:

- Inside the right oral floor spread out the inside of the lower jaw, reaching up to the protrusion of the two sides and through the oral cavity of the right lower vestibule.
- On the outside of the skin of the inflamed area spread to the lower part of the eye socket, the nasal groove, the right cheek, across the jaw to the right carotid groove to

near the base of the right neck. The nature of the inflammatory mass has many walls, opaque white latex. Conduct a wall break, remove all nooks and crannies of the cheeks, right neck, inside the jawbone below 2 sides up to protrusion. Take pus for bacteria culture and make an antibiotic, pump repeatedly washed with hydrogen peroxide, saline and betadine. Drain the incision with a flexible silicone tube, leave open not to close the wound.

Postoperative: Empirical antibiotic use in the absence of antibiotic regimen. Selection of antibiotics for the treatment of Gram-negative and Gram-positive, anaerobic and aerobic bacteria; When there is an antibiotic according to the regimen, use the antibiotic regimen.

The total length of hospital stay is 20 days with 3 surgeries, after surgery, the patient is discharged from the hospital in a stable state of the whole body and spot.

After surgery, the patient will incision and remove pus immediately after entering the hospital 3 hours

IV. DISCUSS

4.1. Diagnose:

Diagnosis of diffuse inflammation in the jaw area is based on clinical and imaging diagnosis. Diagnostic imaging methods can use ultrasound, computed tomography, magnetic resonance. Computer tomography is often used because of the rapid duration of the scan and the assessment of soft inflammatory lesions, and to assess bone and tooth damage. [1]. Image MRI said: (1) edema of the organization, the location, size of purulent foci, the direction of spread of inflammation, the appearance of air bubbles in the organization; (2) degree of tamponade of the airway; (3) condition of inflammation spread to the mediastinum, pleura; (4) the source of the infection can be teeth.

- The diagnosis of patient number 1 when admitted to the hospital is an abscess left corner of the jaw due to tooth 27.28/type 2 diabetes; Therefore, the treatment attitude for this patient upon admission is only medical treatment (antibiotics, pain relief, anti-edema, incision that inflammation when appropriate), patient was incised to remove pus after 3 days in hospital on the 7th day of illness). All indicators and patient evolutions worsened rapidly although patient number 1 body condition on admission was milder than patient number 2. Patient No. 2 admitted to hospital with infection, had symptoms of systemic effects such as increased breathing rate, increased white blood cell count and move left, diagnosed diffuse inflammation in the cheek - lower jaw - right neck due to

teeth 4.7. So after 3 hours in the hospital, the patient was operated on a wide incision to remove drainage pus. Progress after surgery improved quickly. Through this, we can see that patients with diffuse inflammation in the jaw area need early diagnosis to make the right direction of management, which is extensive and satisfactory purulent incision surgery.

- Systemic diseases, especially diabetes, always worsen infections and make blood sugar very difficult to control. Patient number 1 had a history of diabetes mellitus type 2.

4.2. Treatment: Diffuse inflammatory inflammation in the jaw area progresses rapidly, high risk of death. Treatment should actively and comprehensively based on the following factors: Early diagnosis, airway control, Extensive surgery for drainage to remove pus satisfactorily, taking high doses of antibiotics, Tooth extraction causes inflammation [2,3]. Progressive disease involves the bacterial toxin and a decrease in the body's resistance. The treatment strategy need to address local inflammatory foci, use antibiotics and correct systemic disorders, comorbidities, improve the body's resistance.

Surgery: Purulent incision surgery in Patient 1 was performed by a young surgeon who did not have much experience with the first surgery, so the degree of pus removal is not satisfactory with the time of incision late, so pus is not drained and movements up much severe disease. After the first surgery, the patient also had to undergo 5 more surgery to expand the inflamed area to remove pus, accompanied by a lot of systemic disorders need to be adjusted. In patient number 2, the first surgery was performed early by an experienced surgeon and the incision was large enough that the patients only need to undergo one more surgery to resolve the cause tooth extraction (The first surgery could not be extracted because the patient's teeth were close to the jaw), no systemic disorders and blood transfusion, albumin is only half that, the duration of the hospital stay was half of the patient number 1, even though the admission to the patient number 2 was worse.

Thus, with patients with diffuse inflammation in the jaw area, it is necessary to have a positive attitude right from the reception to make an accurate diagnosis and surgery at the right time, bringing good results for the treatment process.

- Antibiotic: antibiotic therapy, should be used early, high dose, combined with antibiotics, use intravenously. Here we have used empirical antibiotics in the absence of antibiotic regimens. Selection of antibiotics for the treatment of Gram-negative and Gram-positive, anaerobic and aerobic bacteria. Other studies recommend the use of penicillin G, clindamycin, gentamicin or metronidazole before the results of bacterial cultures and antibiotics are available. [4].

- Blood products help improve resistance and health.

- Adjust systemic disorders, especially blood sugar control: during the treatment, the patient's blood sugar changes a lot so we have to monitor every day, Adjusting with appropriate insulin injections together with dietary adjustments to provide enough energy for patients who are in a state of depression but do not cause hyperglycemia.

- Status suffocation should be evaluated and timely intervention. The cause is usually an inflammation of the oral floor, causing pressure on the upper airways or edema of the larynx. When indicated, it is necessary to place the endotracheal tube to maintain the

airway, tracheostomy requires limited indications. In 2 clinical cases, we performed endotracheal intubation during anesthesia, then maintained mechanical ventilation at ICU.

V. CONCLUSION:

Disseminated inflammation in the jaw area is an emergency disease that requires early diagnosis and surgery, adequate pus incision at the beginning, combined with systemic antibiotics, Treatment for other associated systemic disorders will yield good results, shorten treatment time, reduce the number of surgeries as well as treatment costs, reduce the risk of death.

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