

CHALLENGES OF THE INTERDISCIPLINARY APPROACH IN AN INDIVIDUAL WITH SEVERE HEART DISEASE AND ACUTE DENTAL ABSCESS

DESAFIOS DA ABORDAGEM INTERDISCIPLINAR DE INDIVÍDUO CARDIOPATA GRAVE COM ABSCESSO ODONTOGÊNICO AGUDO

ABSTRACT

Natalia Garcia Santaella¹
Aloízio Premoli Maciel¹
Reyna Aguilar Quispe¹
Gabriela Moura Chicrala¹
Priscila de Fatima Caminha
Haendchen²
Paulo Sérgio da Silva
Santos¹

1. Department of Surgery,
Stomatology, Pathology, and
Radiology, Faculdade de Odontologia
de Bauru, Universidade de São Paulo,
São Paulo, SP, Brazil.

2. Hemodialysis Sector, Hospital
Estadual de Bauru. Bauru, SP, Brazil.

Correspondence:
Paulo Sérgio da Silva Santos.
Endereço: Alameda Doutor Octavio
Pinheiro Brisolla, número 9-75,
Vila Universitária, Bauru, SP, Brazil.
paulosss@fob.usp.br

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Systemically compromised individuals with multiple comorbidities represent a challenge in terms of the surgical approach. Patients with atrial flutter take anticoagulants to reduce the risk of thromboembolic events, but there is a greater risk of hemorrhaging during surgical procedures. Infections of odontogenic origin may involve hematogenous dissemination and further aggravate the patient's overall clinical condition. The surgical approach should always target the patient's safety and quality of life, considering the risks and benefits of the procedure and the professional's preparedness to cope with possible accidents and complications, given the risk of perioperative mortality. This is a case report of the challenge of establishing a treatment plan and course of action for dental infection in an ASA IV polymedicated patient with a history of chronic kidney disease undergoing hemodialysis, systemic arterial hypertension, diabetes mellitus, anemia, coronary insufficiency, atrial flutter, atherosclerosis and diabetic foot. Prior bridge therapy, use of local hemostatic measures, and pre- and postoperative antibiotic therapy were instituted for the procedure to be carried out under general anesthesia. Interdisciplinary action has proved to be essential for establishing safety criteria and deciding on the best time for surgical intervention.

Keywords: Heart Defects; Diseases; Renal Dialysis; Comorbidity; Periapical Abscess.

RESUMO

Os indivíduos sistemicamente comprometidos e com múltiplas comorbidades são um desafio para a abordagem cirúrgica. Pacientes com flutter atrial fazem uso de anticoagulantes para diminuir o risco de eventos tromboembólicos, porém há maior risco de hemorragia durante procedimentos cirúrgicos. As infecções de origem odontogênica podem ter disseminação hematogênica e agravar ainda mais o quadro clínico geral do indivíduo. A abordagem cirúrgica deve sempre visar à segurança e à qualidade de vida do paciente, levando em consideração os riscos e benefícios do procedimento e o preparo do profissional frente a possíveis acidentes e complicações, haja vista o risco de mortalidade perioperatória. O presente caso relata o desafio de estabelecer plano de tratamento e conduta diante de infecção odontogênica em indivíduo cardiopata grave polimedicado ASA IV com histórico de doença renal crônica sob hemodiálise, hipertensão arterial sistêmica, diabetes mellitus, anemia, insuficiência coronariana, flutter atrial, aterosclerose e pé diabético. Para o procedimento sob anestesia geral, foi instituída a terapia de ponte prévia, utilização de medidas hemostáticas locais e antibioticoterapia pré e pós-operatória. A atuação interdisciplinar mostrou-se essencial para estabelecer critérios de segurança e decidir o melhor momento para a atuação cirúrgica.

Descritores: Cardiopatias Congênitas; Diálise Renal; Comorbidade; Abscesso Periapical.

INTRODUCTION

Atrial flutter (AF) is considered to be one of the most common arrhythmias¹. The risk factors associated with its development include systemic diseases such as systemic arterial hypertension (SAH) and coronary artery disease. Patients with AF have a high risk of developing thrombosis and stroke and are recommended anticoagulants as a preventive measure.^{2,3}

Arterial hypertension, besides being a risk factor for heart disease, can additionally trigger other diseases such as renal failure, which is associated with several systemic complications that make surgical interventions challenging.⁴

Cardiopathic patients who need hospitalization for dental procedures need to be managed carefully by a multidisciplinary team. In the presence of infectious foci in the oral cavity,

such as a dentoalveolar abscess or pericoronitis, the patient's health may deteriorate due to the risk of a systemic infection. Therefore, a dental surgeon must always be prepared to manage such patients.^{5,6}

Dental procedures in cardiopathic individuals are considered low-risk. However, when associated with other systemic diseases, the case may become high-risk as complex dental procedures, such as dental extractions are required.^{4,5}

OBJECTIVE

To describe the complex management of individuals with coronary insufficiency and atrial flutter with several comorbidities associated with acute dentoalveolar abscess.

CASE REPORT

A 47-year-old male, complaining of "toothache" presented to our clinic with a history of chronic kidney disease, hemodialysis for 4 years, SAH, type II diabetes mellitus, diabetic foot, chronic anemia, coronary insufficiency, AF, and cardiac atherosclerosis. He was on the following medications: sevelamer, human erythropoietin, iron hydroxide, B complex, losartan, NPH and regular insulin, simvastatin, atenolol, enalapril, gabapentin, warfarin, amiodarone, diltiazem, and allopurinol.

The extraoral physical examination revealed a local inflammatory lymphadenopathy in the left submandibular ganglion chain. On an intraoral physical examination a semi-erupted left lower third molar tooth was seen with pericoronitis and dentoalveolar abscess with suppuration from the gingival sulcus, pain on palpation, and poor oral hygiene. On imaging, a periodontal ligament space widening and extensive carious dental lesion was seen on an oblique radiography of the right mandible.

The laboratory tests showed that following results: Prothrombin Time (PT) = 65.3 s, International Normalized Ratio (INR) = 5.63, Urea = 89 mg / dL, Creatinine = 13.1 mg / dL, Glucose = 168 mg / dL, Hemoglobin = 8.8 g / dL, and Blood Pressure = 182 / 860 mmHg.

Dental management: In view of the acute dentoalveolar abscess, to the patient was prescribed 500 mg amoxicillin orally every 8 hours for 7 days, mouthwash with 0.12% chlorhexidine digluconate mouthwash without alcohol, and a surgery was planned to remove the infected tooth. A pre-anesthesia evaluation classified the patient as ASA IV. After discussing the case with the consulting physician, a bridge therapy was performed prior to the surgical intervention. Seven days before surgery warfarin was stopped and heparin was continued during the hemodialysis sessions. Vitamin K was administered 24 hours before surgery to achieve an INR of 2.83. The surgery was performed a day after hemodialysis with an INR of 1.84 under local anesthesia. The left lower third molar was removed using local hemostatic agents measurements without any complications. Amoxicillin was given pre and postoperatively (500 mg every 8 hours for 7 days). 24 hours postoperatively the INR was 1.29. The postoperative period was uneventful with good healing, no bleeding, and no pain or any clinical signs of oral infection.

DISCUSSION

Systemically compromised patients are a challenge to manage due to the risk of acute oral infections. In this case, the patient presented with an infectious focus in the mouth and several severe systemic comorbidities, pain and dental infection, and risk of perioperative mortality (ASA IV)⁷ making dental intervention a challenge.

Therefore, a cardiopathic individual with existing comorbidities may deteriorate clinically with any additional stress, especially in the face of a complex surgery involving removal of third molars.⁸ In these cases, surgery under general anesthesia is the safest way to perform the dental procedure to ensure patient safety and reduce the risk of morbidity and mortality.⁹ Moreover, it is important to control local infection and prevent the spread of hematogenous and secondary infection from the arteriovenous fistula associated with hemodialysis by administration of pre- and postoperative antibiotic therapy^{8,10}.

Surgical intervention in anticoagulated individuals is a concern due to the risk of bleeding. In the present case, the patient was on an oral anticoagulant and had a PT of 65.3 s and an INR of 5.63, which is very high. The recommended therapeutic dose is 2 to 3 mg and is contraindicated while undergoing surgical procedures due to a high risk of bleeding.^{11,12} A bridge therapy by suspension of warfarin and replacement with low-molecular-weight-heparin is recommended for anticoagulated patients undergoing emergency surgery as it reduces PT and INR values, thus decreasing the risk of thromboembolic events and bleeding. This procedure was done in the present case to ensure patient safety.¹³⁻¹⁵

Poor oral health may contribute to the mortality of patients with chronic renal disease because it may stimulate an inflammatory reaction and lead to the progression of diseases, such as atherosclerosis, which results in ischemia, acute myocardial infarction, and diabetes mellitus. Thus, a dental surgeon plays an important role in controlling and removing acute infectious foci which is essential for treatment.^{16,17}

Interdisciplinary management is fundamental to management of these kinds of patients.⁹ In the present case, the interaction between the nephrology and anesthesiology team was crucial to ensure successful treatment; from the planning stage to surgery up to the postoperative period for superior patient safety and management.

CONCLUSION

Patients with severe heart diseases and multiple comorbidities that are at risk of perioperative mortality need to undergo oral surgery with established safety criteria set by a multi-professional team. The criterion should follow proper management to ensure safety of the dental procedure.

CONFLICTS OF INTEREST

The author declares that he has no conflicts of interest in this work.

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