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Medical Science

VASCULAR COMPLICATION DUE TO THE USE OF CALCIUM HYDROXYAPATITE: CASE REPORT

Dr. GicelioNobrega	Physician
Dr. Honório Sampaio Menezes	Physician, MD
Dr. Victor Hugo Rabello	Physician
Dr. Roberto Chacur*	Physician, Specialist *Corresponding Author
Karina Alcantra Silva	Medical Student
Anny Carolina de Melo Guedes	Medical Student
Sayonara Bruna Mesquita	Medical Student
Dra. Nívea Bordin Chacur	Physician
Dr. Rodrigo Cadore Mafaldo	Physician, Specialist
Dra. Danuza Dias Alves	Physician
Dr. Leandro Dias Gomes	Physician, MD
Dra. Fernanda Bertolozo	Physician
Giulia Casa Nova Barbosa	Biomedical student

ABSTRACT **Introduction:**Filler injection for augmentation and facial filling is a cosmetic procedure that has been increasingly common in recent decades.

Objective: This work aims to report a patient's case.

Methodology: Case report of a complication after an aesthetic procedure performed using calcium hydroxyapatite. Patient was a 27-year-old female whocomplained of ischemia in her upper lip.

Conclusion: Among the complications of filling procedures, the one presented in the case, tissue necrosis due to loss of blood circulation, is the most serious. The treatment used, which included hyperbaric chamber, reduced the ischemic area.

KEYWORDS : Hydroxyapatite, Vascular complication, Calcium Hydroxyapatite injection, necrosis, HBO².

INTRODUCTION

Filler injection for facial volume augmentation is a cosmetic procedure that has been increasingly common in recent decades.[1,2,3]

Because these types of fillings are non-surgical, relatively easy to be carried out, and present rapid results, in recent years, an increasing number of complications have been related to them, including allergic reaction, granuloma formation, skin necrosis or cellulite, as well as arterial occlusion or embolization.[1,4,5,6]

Calcium hydroxyapatite (CaHA) is a semi-permanent softtissuefilling substance which can last from one to two years in tissues. It is used mainly to treat facial depressions and asymmetries, in addition to correcting post-rhinoplasty deficiencies.[1]

Injectable soft tissue fillers provide patients with immediate results without the downtime associated with traditional facial rejuvenation surgery.

Mild pain, swelling, and bruising at the injection site are common and expected consequences of these treatments.Real complications develop less frequently.[2,6]

In the present case report, the results of a serious complication after an aesthetic procedure which injected calcium hydroxyapatite into apatient's upper lip is described.

CASE REPORT

A 27-year-old single female, born and resident in João Pessoa (Paraíba, Brazil), came to the clinic with a complaint about her upper lip. The

initial medical evaluation on September 09, 2019 indicated the presence of devitalized tissues, an area of necrosis, and moderate exudation in the patient's upper lip, as well as perilesional erythema, allresulting from a complication of a filling procedure with calcium hydroxyapatite.

Treatment was carried out using aseptic techniques: cleaning with polyhexamethylenebiguadine(PHMB)solution and antiseptic soap, use of non-adherent mesh embedded with petrolatum emulsion, sterile antimicrobial gauze dressingembedded with PHMB, and sticking plaster made of elastic polyester.

Treatment with hyperbaric oxygen therapy started on the same day of the first consultation, being followed by debridement between sessions. These presented significant improvement in the necrotic area. Dressings were performed daily due to the patient's need for hyperbaric oxygen therapy and to her clinical conditions. Tramadol, amoxicillin with clavulanate, and Ketorolac Trometamol were prescribed. Duringthe medical reassessment after ten daily sessions of hyperbaric chamber, no ischemic process was noticed and the wound was healed. This case report was approved by the Research Ethics Committee of the Veiga de Almeida University (CONEP record).

Figure 1 – Images before and after treatment.

DISCUSSION

Even when administered by experienced professionals, soft tissue fillers can cause various reactions. These may range from small and self-limited responses to serious complications that require immediate treatment and follow-up.[2,6]

Several fillings have gained popularity due to their fast and predictable results.

Over the years, as there has been an increasing demand for these types of procedures, the group of people who can provide these techniques has expanded from cosmetic surgeons and dermatologists to include health professionals with little or no training in aesthetic medicine. Even when administered by experienced professionals, the use of fillers can cause several unwanted reactions.[2,3]

Calcium hydroxyapatite was the filling material most commonly associated with complications in rhinoplasty.[2,3]

Cosmetic injections of calcium hydroxyapatite into the nasal bridge can result in arterial embolism of the ophthalmic system. It can alsoreach the optic, the retinal, and the choroidal nerves, causing severe long-term visual damage and impairment of the visual field.[1,2,4]

Although the case presented here was not of nasal correction, the mechanism of vascular obstruction was the same as that presented in cases of nasal correction.

CONCLUSION

Tissue necrosis, as presented in this case, although rare, is a devastating accident caused bytreatmentsusing calcium hydroxyapatite filler. The proposed treatment, which included hyperbaric oxygen therapy, was effective and reduced the local ischemic damage. Doctors should be aware of this possible complication and inform their patients before offering these cosmetic treatments.

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