Hand Surgery and the Crack-Cocaine User. A Case Report

Carlos Henrique Fernandes · Luis Renato Nakachima ·
João Baptista Gomes dos Santos · Flavio Faloppa ·
Walter Manna Albertoni

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Introduction

Cocaine comes in two forms, hydrochloride (white power) and freebase (crack). “Crack” is the street name given to cocaine made by the combination of the hydrochloride and alkali (sodium bicarbonate or ammonium) [1]. Some crack-cocaine users develop changes in the appearance of their hands caused by the heat of the glass cocaine pipe [2]. The presence of burns and blackened hyperkeratotic lesions, mostly on the dominant hand or digits, have led to the term “crack hands” [3]. We present a case report of a patient with a chronic boutonniere deformity in the fifth finger and superficial burns on the tips of the thumb, second and third fingers.

C. H. Fernandes (✉) · L. R. Nakachima · J. B. G. dos Santos ·
F. Faloppa · W. M. Albertoni
Grupo de Cirurgia da Mão, Departamento
de Ortopedia e Traumatologia, Universidade Federal de São Paulo,
Rua Borges Lagoa 1065 Cj 68/69,
São Paulo, SP, Brazil CEP 04032-038
e-mail: carloshfernandes@uol.com.br

C. H. Fernandes
e-mail: carloshfernandes@ortocorpore.com.br

Case Report

A 21-year-old man was admitted to the hospital for surgery to correct chronic boutonniere deformity of the fifth finger of the right hand.

During the entrance exam, burns on the tips of the thumb index and middle fingers (Fig. 1) were observed. Immediately, it was thought that those were thermal burns from lighting a crack cocaine pipe. The patient was asked if he was using crack and he denied it. As the lesions were not acute, the surgery was performed without complications during anaesthesia.

During the surgical repair, the central band of the extensor hood was reattached in to the base of the media phalanx with a mini-anchor. The PIP joint was fixed in full extension with a transarticular Kirschner wire. The patient was informed of the importance of maintaining the PIP in a proper splint for the designated amount of time following repair. During the second week after the operation, a pin tract infection appeared. It was treated with oral antibiotics and removal of the Kirschner wire. The splint was sustained for 6 weeks. The patient performed hand therapy irregularly. After 1 year, the finger was painful and with loss of digital motion in a flexion deformity.

Discussion

Cocaine is a central nervous system stimulant extracted from *Erythroxylum coca* leaves. Free-base cocaine is prepared from

Fig. 1 Burns and blackened hyperkeratotic lesions on the tips of the thumb, index and middle fingers of the hand

baking soda and cocaine hydrochloride. Both presentations of cocaine, hydrochloride and free-base, are highly addictive [4]. Crack users have also begun to appear among higher-income groups, although the drug is still more prevalent among lower-income classes [5]. Crack pipes are generally very short, to minimise the time between evaporation and loss of strength. The hot pipe might burn the lips, tongue or fingers, especially when shared with other people quickly taking another hit from the already hot and short pipe.

In general anaesthesia, the most frequent problem is severe hypertension, which occurs during induction, laryngoscopy and tracheal intubation. Cocaine increases the effects of local anaesthetics, which might lead to intoxication. Regional anaesthesia with high doses of local anaesthetics should be avoided, since it is impossible to predict a safe dose [1].

Some reviews of injury risk associated with cocaine use showed a higher risk for all types of injuries in cocaine abusers who were admitted to the emergency room, including injuries in the hands [6–8].

Prolonged use of crack-cocaine can cause changes in the hands that include hyperkeratosis over the knuckles, loss of the cuticles of the proximal nail folds, atrophy of the nail, ‘parrot’s beak’ clawing appearance of the nail, colour changes in hands, particularly over the knuckles, associated with coldness and numbness [9].

Before surgery, the patient must undergo a physical examination [10], especially of the fingertips, for burns, which may provide the only initial toxicological clue for cocaine use [11].

The profile of crack users makes it difficult for these individuals to adhere to the treatment. The difficulty presented by our patient to follow medical recommendations during the postoperative period were reported by Buckland

et al. [12]. They showed high rates of concurrent psychiatric illness, behavioural issues and loss to follow-up, compromise patient care and ability to accurately assess long-term outcomes.

For the practitioners, especially hand surgeons, these pieces of information are important because the medical recommendations are not normally followed after the surgery. We recommend that the surgery be performed only in emergency cases. If possible, it would be better to wait for a patient’s psychiatric improvement before submitting him/her to surgery.

Conclusion

The hand surgeon should have a high suspicion for crack-cocaine use when adults present with burns to the pulp of the fingers, since drug history is often concealed. These patients sometimes have psychiatric comorbidities and difficulties to adhere to the treatment.

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