

# Plastic Surgery of Male External Genitalia after a Trauma Caused by a Mill in Rural Area

Modou Ndiaye<sup>1,\*</sup>, Ibrahima Dara Diamé<sup>1</sup>, Amath Thiam<sup>3</sup>, Tiennou Hafing<sup>1</sup>, Ibrahima Diallo<sup>2</sup>, Ibrahima Bocar Welle<sup>1</sup>, Mouhamed Aly Sylla<sup>1</sup> and Mohamed Jalloh<sup>4</sup>

<sup>1</sup>Centre Hospitalier Régional de Ourossogui, Senegal

<sup>2</sup>Centre Hospitalier Régional de Ziguinchor, Senegal

<sup>3</sup>Centre Hospitalier Universitaire Aristide Le Dantec, Senegal

<sup>4</sup>Hopital General de Grand Yoff, Senegal

**Abstract:** The trauma of the external genital organs is a common urological emergency that can affect the patient's functional and psychosocial prognosis as well as his family. We report a case of direct trauma of the external genitalia of a 27-year-old by a mill, requiring a recover plastic surgery in rural area. The examination at admission revealed a significant damage of penile and scrotal skin, denuding testes and cavernous bodies. A cover plastic surgery was performed. After a year of follow up, the outcome was good.

**Keywords:** External genital organs trauma, urological emergencies, plastic surgery, decay.

## INTRODUCTION

The trauma of the external genital organs is a common urological emergency [1]. It can result in psychological, physical, functional and emotional impacts in patients as well as spouses and parents, hence the need for early and adequate care. The external genital organs are protected from injury by their location and mobility. It is difficult to make a generalized classification of the trauma of the external genital organ due to the complexity of the wounds [2], and its incidence is underestimated [3,4]. External genital organs are protected from injury by their location and mobility [5]. The use of grinding machines by uneducated people is very common in our underdeveloped countries. We report a case of direct trauma of the external genitalia by a grinding machine requiring a plastic surgery in rural area and to deduce the preventive measures.

## CASE REPORT

Mr. CH. D, a 27-year-old patient, married, was admitted at the emergency room of the Regional Hospital Center in Ourossogui, Senegal for a penetrating wound of external genital organs following a work-related accident caused by a grinding machine (Figure 1). No specific medical history was noted. The



**Figure 1:** Image of the grinding machine.

patient was in good general condition, had a Glasgow score of 15 and had normal pulse and blood pressure. Physical examination revealed an important decay of all the penile and scrotal skin (Figure 2). Testicles and cavernous bodies were denuded but intact. The spermatic cords, glans and urethra were not affected. Routine blood tests were normal. The tetanus serum and vaccine were administered to the patient. The

\*Address correspondence to this author at the Department of Urology, Hopital General de Grand Yoff, P.O. Box: 3270, Dakar Senegal; E-mail: jmohamed60@yahoo.fr

exploration in the operative room confirmed the integrity of the cavernous bodies, the urethra and the testicles and viability of remaining penile and scrotal skin. He underwent a debridement followed by a covering plastic surgery (Figure 3). At day 10 post repair we noted a necrosis of the cutaneous flap at the mid penile level requiring daily dressing change (Figure 4). One month after a second covering plastic surgery by a pedicle scrotal flap was made. The operative evolution was satisfactory. The patient was seen a year later with a good cosmetic result (Figure 5) and good erectile function.



**Figure 2:** Image of the decay of external genital organs.



**Figure 3:** Per operative image of cover plastic surgery.



**Figure 4:** Image of the flap necrosis.



**Figure 5:** Image of external genitalia, one month after healing.

## DISCUSSION

Open trauma to the external genitalia is rarer, whether it is scrotal wounds or penoscrotal skin swabs by direct or indirect tearing. The most frequent causes of traumas [4] are fire arms or white weapons, especially in countries in war, but domestic accidents by machines are also possible. In our patient, the mechanism was direct by a grinding machine. The belt of the machine attracted his clothes resulting in an imbalance and an attraction of the external genital organs. In our underdeveloped countries the use of these kinds of machines is very common especially in rural areas and is done by uneducated people so awareness of the existence of these kinds of complications is important. Trauma by bite of animals or other machines are also described in the literature

[3,6,7]. In our regions, people working with these machines are in the informal sector, which does not give them any coverage in case of a work accident. The loss or serious injury of the external genital organ was described as similar to the loss of the breast in a woman [5]. This explains the severity of these trauma and the possible psychosocial impact. Physical examination is a critical step because it allows for the evaluation of the lesions and determines the possibility of cure. Our patient presented a significant lesion of the penile and scrotal skin, stripping the testicles. Subsequently the patient was scared because he just got married. However, the testicles, sperm cords, and cavernous bodies were intact when explored. However damage to those organs during trauma is described in the literature [4,8]. This is often due to a violent perineal trauma by direct shock. Moreover, they remain protected by their mobility in the scrotum and by the solidity of the Albuginea [1]. Tetanus prevention was done in our case by serum and tetanus vaccine. This prevention is recommended for patients whose tetanus vaccination is not up-to-date. The treatment is essentially surgical and based on a cover plastic surgery, which we performed. However a cutaneous graft was performed by many authors like by Valdatta *et al.* [9]. In our case, the evolution was marked by a necrosis of the flap at the mid penile level and subsequently, a second plastic surgery by a pedicle scrotal flap was made a month after which we obtained a good healing. One month later, a second plasty of recovery by a pedicled scrotal flap was done which allowed us to obtain a good cicatrization. The patient was satisfied of his cosmetic, functional and sexual outcomes.

## CONCLUSION

Trauma of the external genital organs is a rare urological emergency and its treatment is mainly

surgical. The recover plastic surgery allows a good healing especially in cases of significant decay. Its prevention is based on the awareness of people handling these machines in rural areas.

## REFERENCES

- [1] Benchekroun A, Iken A, Kasmaoui E, Jira H, Nouini Y, Lachkar A, *et al.* Traumatisme des bourses. À propos de 40 cas. In: Annales d'urologie [Internet]. Elsevier; 2001 [cité 19 août 2017]. p. 349-352. [https://doi.org/10.1016/S0003-4401\(01\)00058-4](https://doi.org/10.1016/S0003-4401(01)00058-4)
- [2] Oranusi C, Nwofor A. Traumatic penile injuries: Mechanisms and problems of treatment in a tertiary institution in Nigeria. *Niger J Clin Pract* 2014; 17(6): 763-766. <https://doi.org/10.4103/1119-3077.144392>
- [3] Diabaté I, Ondo CZ, Ouédraogo B, Thiam Mb, Bâ A. Les amputations et autres traumatismes de la verge. *Afr J Urol* févr 2017; 317; Disponible sur: <http://linkinghub.elsevier.com/retrieve/pii/S1110570416301266>
- [4] Culty T, Ravery V. Traumatismes scrotaux : stratégie de prise en charge. *Ann Urol* 2006; 40(2): 117-125. <https://doi.org/10.1016/j.anuro.2006.01.008>
- [5] TP B, Goldfarb B, Trachtenberg J. Male Genital Trauma: Diagnosis and Management. *Int J Trauma Nurs* 1995; 99-107.
- [6] Dubosq F, Traxer O, Boubliil V, Gattegno B, Thibault P. Management of dog bite trauma of the external genital organs. *Progres En Urol J Assoc Francaise Urol Soc Francaise Urol* 2004; 14(2): 232-233.
- [7] Abbassi A, Nour M, Oubejja H, Erraji M, Zerhouni H, Ettayebi F. Les traumatismes des bourses chez l'enfant. *J Pédiatrie Puériculture* 2011; 24(5): 219-224. <https://doi.org/10.1016/j.jpj.2011.05.009>
- [8] Lakmichi MA, Kabour J, Sadiki B, Zahraoui R, Jarir R, Wakrim B, *et al.* Défis et contraintes de la prise en charge chirurgicale des traumatismes des organes génitaux externes chez l'homme expérience de dix ans (154 patients). *Prog En Urol* 2012; 22(13): 764-766. <https://doi.org/10.1016/j.purol.2012.08.056>
- [9] Valdatta L, Maggiulli F, Scamoni S, Pellegatta I, Cherubino M. Reconstructive management of degloving trauma of male external genital organ using dermal regeneration template: A case report. *J Plast Reconstr Aesthet Surg* 2014; 67(2): 264-266. <https://doi.org/10.1016/j.bjps.2013.06.003>