

(Immediate) Primary Versus Delayed Reconstruction of Human and Animal Bite

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ABSTRACT

The belief that there is no place for primary reconstruction of human and animal bite wounds may have originated from the well documented facts that human and animal bite could result in very serious contaminated injuries. This is a comparative study between Immediate versus delayed reconstruction of human and animal bites. We reported 40 cases of bites (31 human and 9 animal bites) was admitted to plastic surgery department Al-Azhar University hospitals, there was different types of wounds at different sites. From March 2000 to January 2008. Immediate reconstruction was done in 30 cases and delayed reconstruction in 6 cases. Post operatively; dressing, prophylactic antibiotic, with closed observation to detect any signs of infection. Hospital stays from two hours up to 5 days according to the procedure done then out patient follow-up.

The results were satisfactory and acceptable to all patients. Healing was achieved in all patients and post operative period was free from major infection or wound breakdown and no patient need subsequent scar revision. So there is no difference between primary and delayed reconstruction in all cases. Key of success of immediate reconstruction of human and animal bite wounds are; good debridement, good tissue handling, closed supervision, cover with antibiotics. So primary reconstruction of human and animal bites is quite possible and should be the method of choice.

INTRODUCTION

The belief that there is no place for primary reconstruction of human and animal bite wounds may have originated from the well documented facts that human and animal bite could result in very serious contaminated injuries, but death or sever infection from human and animal bite is now mostly unlikely [5].

A wide range of medical and surgical problems have been documented in the literature, including deformities; sever infections, amputations, psychological aberrations etc with human and animal bites [4-8].

To avoid these problems such wounds demand immediate reconstruction. Also with advance of

antibiotics immediate reconstruction of injury have been advocated.

Aim of the work:

This is a comparative study between immediate versus delayed reconstruction of human and animal bites.

PATIENTS AND METHODS

We reported 40 cases of bites (31 human and 9 animal bites) was admitted to plastic surgery department Al-Azhar University hospitals, there was different types of wounds at different sites; Table (1), From march 2000 to January 2008.

Immediate reconstruction was done in 30 cases within 1 to 6 hours and delayed reconstruction in 6 cases within 5 to 7 days, 2 cases after several months and conservative management in 2 cases.

The wound was cleaned and surgical procedure was taken under general or local anesthesia. Special care was taken to debride the wound to remove the crushed devitalized tissues.

Reconstruction procedures were performed immediately by direct closure or by using a local flap; the details of procedures are given in Table (1), 36 cases were carried out involved one stage while 4 cases undergo multiple stage reconstruction.

Post operatively; light dressing, prophylactic antibiotic in the form of amoxicillin, clavoric acid, mitronidazole and anti-inflammatory analgesic with meticulous observation to detect any signs of infection. Hospital stay from two hours up to 5 days according to the procedure done then out patient follow-up. Consultation of dog hospital for the patients with dog bite.

Patients with hospital stay more than one day or with flap coverage; IV antibiotics was given while other patients' oral antibiotics was given.

During follow-up we investigate all patients for infectious diseases specially HIV, HCV HBV.

RESULTS

In the present study human bite more frequently represent about 77.5% than the animal bite 22.5%. The ear is most common site of human bite injury.

Human bites mostly caused by assaults or fights; 3 cases during sexual activity. Animal bites caused by dog 6 cases, cat 2 cases and donkey one case.

Age ranged from 10 to 45 years. 25 Males and 15 females.

The results were satisfactory and acceptable to all patients. Healing was achieved in all patients. The post operative period was free from major infection or wound breakdown and no patient need subsequent scar revision. So there is no difference between Primary and delayed reconstruction in all cases. And all patients are free from infectious diseases.

Table (1): Patients data.

No. of pat.	Types of wounds	Surgical procedure
	* Ear 18 Cases all caused by human bite	
8 cases	Linear wounds	Debridement and direct repair
5 cases	Partial helical rim losses	Ascending helical advancement flap
3 cases	Incomplete full thickness loss of helix, anti helix, scapha	Two stage reconstruction via postauricular flap
1 case	Total helical rim loss	Two stage postauricular flap reconst with cartilage graft
1 case	Total avulsed auricle	Temporoparietal fascial flap draped over the denuded cartilage
	* Hand and finger 9 cases : 5 cases by human bite, 4 cases by animal bite	
4 cases	Linear wounds (one by dog)	Direct repair
3 cases	Skin loss (two by dog)	Skin graft
1 case	Amputated terminal phalanges (by dog)	Groin flap
1 case	Compound soft tissue loss	
	* Lip 4 cases : 3 cases by human bite 1 case by animal bite	
4 cases	Linear by cat, and puncture, lacerated, compound wounds by human	Debridement and direct repair
	* Nose 3 cases : 2 cases by human bite 1 case by animal bite	
1 case	Linear wounds	Direct closure
1 case	Small full thickness nostril defect	Composite auricular graft
1 case	Loss of nostril and tip of nose (dog)	Reconstruction via nasolabial flap
	* Chin (2) cases: Caused by human	
1 case	Puncture wounds	Direct closure
1 case	Skin loss	Conservative management
	* Glans penis (1) caused by human bite	
1 case	Linear wounds	Conservative management
	* Lower limb (2) caused by animal bite	
2 case	Skin loss (dog and donkey)	Skin graft
	* Back (1) case: Caused by animal bite	
1 case	Lacerated wounds (dog)	Direct closure

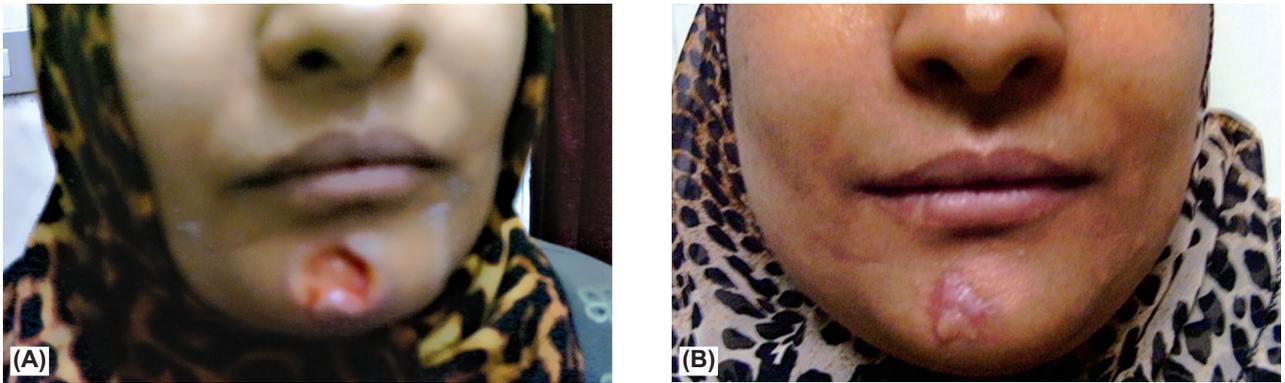


Fig. (1): (A) Female patient 34y (human bite) in chin with skin loss. (B) 15 days with conservative management.



Fig. (2): (A,B) Male patient, 35y (human bite) separation of pedicle flap at the auricle. (C) Immediate reconstr. By direct closure. (D) Postoperative showing good result.

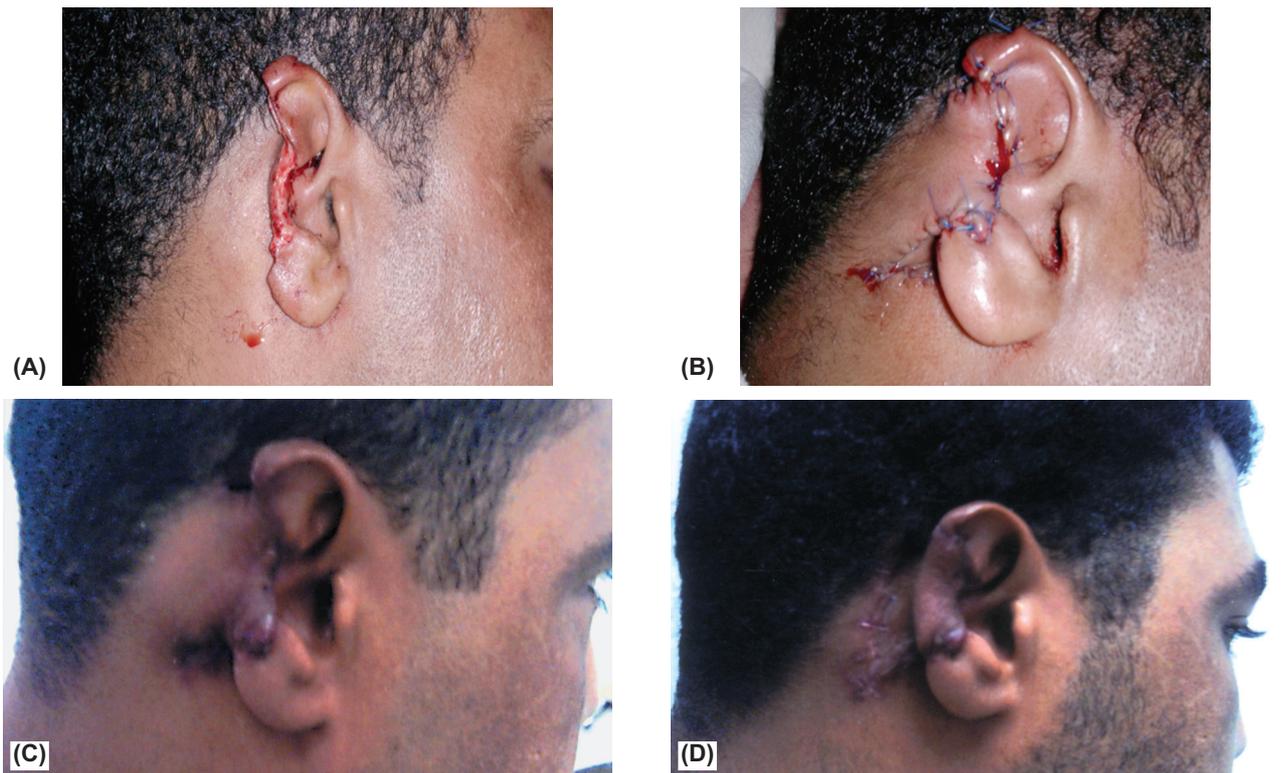


Fig. (3): (A) Preoperative male patient, 27y (human bite) loss of part of helix and antihelix. (B) Intraoperative post auricular flap without cartilage graft. (C) Postoperative result after healing. (D) Postoperative result after separation.



Fig. (4): (A) Male child, 10 years old with multiple wound in the lip and loss of part of lower lat cartilage of the nose (dog bite). (B) Intraoperative marking of nasolabial flap. (C) Intraoperative photograph showing elevation of the flap and position in the defect on tip of the nose. (D) Postoperative result after 16 days. (E) Postoperative result after separation of flap showing good healing of the flap.

DISCUSSION

Immediate repair of human and animal bite wounds was never thought of until (1961), Curtin and Greeley described primary closure of small defect after debridement [1]. Iregbulem; believed that there no place for immediate reconstruction of human and animal bite wounds even it possible and patient presented early [2].

However Earley; reported that the immediate reconstruction was limited to relatively small defect and patient arriving within 24 hours [3].

Delayed primary reconstruction was favored in patients with major defect or infected wound, reported after 24 hours [4].

Uchendu shown that human bite losses of the lip can be treated in same way as most other facial injuries by primary closure as early as possible [5].

Hamza et al., described primary reconstruction. Irrespective to time and the size of the defect, and report minor infection in some cases and treated conservatively [6].

In the present series, primary reconstruction has been carried out in 30 cases within 1 to 6 hours by different technique and the results was satisfactory and acceptable and healing was achieved without infection or wound breakdown and no patient need subsequent scar revision.

And patients with delayed reconstruction show also satisfactory and acceptable results, this indicates success in management of these patients irrespective to the size of the defect and the technique used. So there is no difference between Primary and delayed reconstruction in all cases.

These agree with the result of Tomasetti et al., which report no infection when the treatment was instituted within 24 hours of injury [7]. Also agree with the result of Kyrmizakis et al., which report two cases, one of a partial and one of a total traumatic auricular amputation, both caused by human bites, and successfully managed by The technique of ear reattachment as a composite graft, with partial burial of the amputated part in the retroauricular region with acceptable outcome [8].

Meticulous observation was done for all cases specially for infectious diseases because some authors report infectious diseases caused by human and animal bite, Oh et al.; report a case of extragenital chancre on a nipple from a human bite during sexual intercourse [9]. Also Oladokun et al.; report a case of human bite by an 11-year old HIV positive girl in a pediatrics ward [10]. In present study all patients are free from infectious diseases.

Conclusion:

The primary objective of the repair was to attain good closure that was acceptable both functionally and cosmetically. The key of success of immediate reconstruction of human and animal Bite wounds are; good debridment, good tissue handling, closed

supervision, cover with antibiotics. So Primary reconstruction of human and animal Bites is quite possible and should be the method of choice.

Don't forget infectious diseases e.g. Hepatitis B, transmission A.I.D.S, extragenital chancre and rabiesetc.

You can treat the wound but the psychological wounds?.

REFERENCES

- 1- Curtin J.W. and Greeley P.W.: Human bites of the face. *Plast. Reconst. Surg.*, 28: 394, 1961.
- 2- Iregbulem L.M.: Human bites losses of lower lip. *Plast. Reconst. Surg.*, 64: 811, 1979.
- 3- Earley: Human bites: A review. *Br. J. Plast. Surg.*, 37: 458, 1984.
- 4- Losken H.W.: Human bite of the lip. *Clinics in Plastic Surgery*, 11: 773, 1984.
- 5- Uchendu B.O.: Primary closure of human bite losses of the lip. *Plast. Reconst. Surg.*, 90: 841, 1992.
- 6- Hamza F.A., Nassar L.A. and EI-Mahdy A.M.: Primary reconstruction of human bite wounds of the face. *The New Egyptian Journal of Medicine*, Vol. 15; No.4; 1st December 1996.
- 7- Tomasetti B.J., Walker L., Gromley M.B. and Gold B.D.: Human bites of the face. *Journal of Oral Surgery*, 37: 565, 1979.
- 8- Kyrmizakis D.E., Karatzanis A.D., Bourolias C.A., Hadjiioannou J.K. and Velegrakis G.A.: Nonmicrosurgical reconstruction of the auricle after traumatic amputation due to human bite. *Head & Face Medicine*, 2: 45, 2006.
- 9- Oh Y., Ahn S.Y., Hong S.P., Bak H. and Ahn S.K.: Case of extragenital chancre on a nipple from a human bite during sexual intercourse. *International Journal of Dermatology*, 47 (9): 978-80, 2008 Sep.
- 10- Oladokun R., Brown B.J., Osinusi K., et al.: A case of human bite by an 11-year old HIV positive girl in a pediatric ward. *African. Journal of Medicine & Medical Sciences*, 37 (1): 81-5, 2008 Mar.