

FREQUENCY OF COMPLICATIONS AMONG TRAUMA PATIENTS TREATED BY TRADITIONAL BONE SETTERS

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ABSTRACT

Background: Traditional bone setters are managing trauma patients with great risk to patients. **Objective:** To assess the frequency of complications, among trauma patients treated by traditional bone setters. **Methodology:** Study design: Cross sectional study. This study was conducted in Department of Orthopaedics and Trauma Surgery in Bahawal Victoria Hospital/ Quaid e Azam Medical College, Bahawalpur, Pakistan, from 1st July to 31st December 2017. A total of 77 patients who presented at Orthopaedic outpatient clinic, after being managed by traditional bone setter, were included in the study. Their demographic data, type and site of injury, type of quack's management and their respective complications were recorded. Data was entered in SPSS Version 20 and analyzed. **Results:** Out of 77 patients, 64 (83%) were male and 13 (17%) were female. Their ages ranged from 4-80 years with a mean age of 22 years. Traditional bone setter mainly used sticks and bandages for fracture management. Most common complications observed were joint stiffness 17 (22%) Volkmann's Ischaemic Contracture 16 (21%), swelling of limb 12 (15%) and skin necrosis, 10 (13%). **Conclusion:** High rate of complicated cases managed by traditional bone setters strains Orthopaedic department in our region. A suggested solution may be to incorporate these traditional bone setters into the healthcare system for their better training and regulation.

Keywords: Frequency, Traditional Bone Setter, Fracture, Complications.

INTRODUCTION

Traditional bone setters (TBS) or quacks treat most of the fractures in developing countries without any profound medical knowledge or skill.¹ TBS is a lay practitioner of joint manipulation and takes up the practice of healing without having any formal training in accepted medical procedures.¹ Their practice stays within the family circle, passes from father to son and sometimes to extended family members with others being trained through apprenticeship.^{2,3} There is widespread belief in many societies that TBS are better at fracture treatment than orthodox practitioners.⁴ TBS enjoy patronage by all classes of society despite their education level. Most patients with fractures present first to the traditional bone setters before coming to the hospital.² According to an estimate, between 10 to 40% of patients with fractures and dislocations in the world are managed by unorthodox practitioners.^{1,4,5}

Mismanagement done by TBS of simple fractures created complications for Orthopaedics surgeons.⁶⁻⁹ Their health and socioeconomic consequences prompted us to conduct this study. In this study, objective was to assess the frequency of complications, among trauma patients, treated by traditional bone setters.

METHODOLOGY

It was a cross sectional study conducted in Bahawal Victoria Hospital / Quaid e Azam Medical College, Bahawalpur. All the patients who presented with mismanagement done by quacks in Orthopaedic outdoor clinic, were recruited for the study from 1st July to December 31st 2017. Their age, gender, type and site of injury, type of TBS management and its complication were recorded in a predesigned proforma. All the patients who presented with complications due to delayed presentation were excluded from the study. The obtained data was analyzed using SPSS version 20.0 software. Ethical approval was sought from ethical committee of hospital.

RESULTS

There were 77 patients who presented in Orthopaedic outpatient clinic with complications after being treated by quacks. Their age range was 4-80 years with a mean age of 22 years. There were 64 (83%) male patients and 13 (17%) female patients. Quacks used various methods of treatment. Of the total 59 (76.6%) were treated by sticks and bandages, 16 (20.81%) were treated by tight bandages and 2 (2.6%) were treated by massage. Various complications of TBS treatment were observed; 17 (22.1%) patients has joint stiffness, 16 (20.81%) has developed Volkmann's Ischaemic Contracture, 12 (15.6%) patients developed gross swelling of the

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Received: 31-07-2018

Accepted: 25-08-2018

limb and 10 (13%) patients has skin necrosis. Other complications observed were valgus/varus deformity, skin blisters, nonunion, malunion exposed bone and compartment syndrome. (Table I)

In 53 (69%) patients had their upper limb involved. Most common bone involved was humerus (24.7%), radius and ulna (15.6%) and tibia (11.7%).

Table I: Complications among trauma patients managed by traditional bone setters

Complication	Traditional bone setters			
	Sticks and Bandage	Massage	Tight Bandage	Total
Joint Stiffness	10	1	6	17
Volkman's Ischaemic Contracture	13	0	3	16
Swelling of limb	10	0	2	12
Skin Necrosis	10	0	0	10
Valgus/Varus Deformity	3	0	2	5
Blisters	4	0	0	4
Non Union	3	0	0	3
Compartment Syndrome	1	0	1	2
Exposed bone	2	0	0	2
Malunion	2	0	0	2
Chronic Pain	0	0	1	1
Gangrene	1	0	0	1
Dislocation	0	0	1	1

DISCUSSION

Orthopaedic surgeons are highly accomplished in managing bone trauma and they are successful in almost all cases in restoration of bone function. Even though their success rate is high a large fraction of population patronizes quacks. Ogunlusi et al found out that most people visit traditional bone setters because they wanted cheaper and quicker services than modern surgical management.² The TBS relies solely on the conservative method of fracture treatment, and all fractures are reduced by the closed method and stabilized with an external traditional splint and a protracted period of immobilisation.⁵ These modes of management usually result in life long disability. Orthopaedic surgeons and government facilities are overburdened by such complications as they spend their expertise and resources on them instead of focusing on modern orthopaedics.^{2,6,7,8}

The high male ratio in this study emphasizes that males are predominantly injured due to their involvement in injury-prone activities.^{9,10,11} Patients in their twenties were most commonly

affected. It is explained by the fact that the young adult group that engages in daily high energy activities either to earn livelihood or for recreation are therefore more likely to sustain severe injuries to the limbs.¹² The deleterious effects of TBS treatment hence reduces economic productivity of the society.¹³ Patients of a diverse age range, 4 to 80 years attended TBS. Ekere et al had similar finding.¹⁴ Sticks and bandages were most commonly used by TBS for fracture and joint management. Onuminya et al also had similar findings.⁵ The most common complication observed was Volkmann's Ischaemic Contracture. Tantray et al found 21 cases with Volkmann's Ischaemic Contracture after tight bandages done by Traditional bone setters.¹⁵ VIC was followed by local skin necrosis, gross swelling of the affected limb and joint stiffness. Extensive blister formation at the site of sticks and bandages were also observed. Pressure on the skin from tight splintage especially over bony prominence is responsible for this.¹⁴ Eshete et al,¹⁶ found that these splints were not removed when pain increases after immobilization. Therefore a compartment syndrome with its permanent sequelae, or death of tissue and gangrene may follow. For these latter cases, amputation with delayed primary or secondary suture is the only possible treatment.

Death may result from such complications as tetanus and septicaemia.¹⁶ Long term complications observed were malunion, valgus/varus deformity, nonunion and exposed bone were seen as bone alignment and reduction were not considered by TBS. Tight bandages along joint for extensive period of time immobilized it eventually leading to joint stiffness. Joint stiffness occurs due to reduced lubrication of joint. The stiffness is more often due to oedema and fibrosis of the capsule, the ligaments and muscles around the joint or adhesion of the soft tissues to each other or the underlying bone.¹⁷

In the report by Ikpeme and colleagues,¹⁸ joint stiffness constituted 11.6% half the percentage observed in our study. Massage of the hip joint lead to avascular necrosis of in one of the patients. No significant statistical association was seen between ages of patient, type of fractures and their complications.¹⁸

Most patients presented with upper limb complications 53 (69%) explaining the fact that TBS mainly dealt easier to deal fractures. Fracture of humerus was most commonly seen. Dada et al¹¹ and Memon et al¹⁹ reported similar results. Eshete et al¹⁶ and Onuminya et al²⁰ in Africa and Shah et al²¹ in Nepal reported a significant decrease in

complications and improvement in the delivery of orthopedic care after TBS undertook instructional courses.

CONCLUSION

Our study showed that traditional bone setters are managing trauma patients leading to serious complications due to their poor knowledge. Most common complications were joint stiffness, Volkmann's ischemic contracture and swelling of limb.

Injuries with good prognosis were complicated by traditional bone setters. Therefore there is a need to educate the community at all levels and special programs should be introduced to train traditional bone setters. It will alleviate stress on Orthopaedic surgeons due to undue complications. It will also guarantee safe and better prognosis of patients.

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Article Citation: Zulfikar Z, Bubak SZ, Jahangir A, Ali Z. Frequency of complications among trauma patients treated by traditional bone setters. *JSZMC* 2018;9(3): 1456-1458.