

## Case Report

# Metallic Object within the Knee Joint: A Consequence of Abnormal Sitting Position in a Tricycle

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## Abstract

The use of tricycle as a means of transport is becoming more popular across the rural and urban areas in Nigeria. This article reports a case of a 34-year-old woman who sat with her right knee protruding outside the body of the tricycle; while it was on motion, she hit her knee against part of metallic scraps being pushed in opposite direction. X-ray confirmed the presence of the object around her knee joint, she had surgery to remove the object and she recovered fully from the injury after the surgery. Proper sitting position while inside tricycle is very essential to prevent some avoidable injuries.

**Keywords:** Injury, knee, tricycle

## INTRODUCTION

Tricycle is one of the common means of transport in Nigeria; it has the capacity to carry three passengers at the back roll and one passenger in the front besides the driver. Its maximum speed is lower compared to that of motorcycle, this has made tricycle relatively safer compared to motorcycle, also the fact that it has part of its structure on either side protecting the passengers has made the degree of injury sustained during tricycle road traffic accident (RTA) to be less in severity compared to those of motorcycle, but it is not still as safe as a taxi or a bus. Just like in other means of transportation, the causes of accidents in tricycles can be due to human or environmental factors, such as over speeding, reckless driving, overloading or negligence of road signs, bad roads, lack of training and regulation of the riders.<sup>[1]</sup>

Tricycle has been abused in several ways such as using it to carry goods that is beyond its capacity such as a complete set of chair, log of woods and iron gate; also sitting with the passenger's legs protruding out on either side of the tricycle can also be considered as abuse; all these prone the tricycle passengers to injuries when tricycle accident occurs on the road [Figure 1].

## CASE REPORT

A 34-year-old business woman who resides in Ilorin was

referred on account of right knee pain and wound of 3 weeks' duration. She was a passenger in a tricycle that carried four passengers at the back (instead of three) and one passenger in the front. She sat at the back roll at the extreme end of the right side with her right knee protruding out of the tricycle. Her right knee hit metallic scrap inside a wheelbarrow being pushed in opposite direction to the tricycle. The metallic object was buried completely within the knee joint, and she sustained an abrasive wound just below the knee joint. After few days, she noticed increased right knee pain and a blister on the knee with associated minimal bleeding, there was progressive right knee swelling and difficulty in bearing weight on the right lower limb and there was no fever. Parts of the wound subsequently healed but inability to bend the right knee and difficulty in bearing weight on the right lower limb due to pain persisted.

Lower limb examination revealed antalgic gait on the right lower limb; there was right lower limb swelling with about 3 cm transverse wound below the right knee covered with

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slough [Figure 2]. There was a bulge above the right knee joint line; she had marked tenderness around the knee.

Right knee radiograph shows a radiopaque object passing through the right patella to the femoral condyle [Figure 3].

A diagnosis of foreign body in the right knee was made. She was admitted and placed on antibiotics and analgesics. She had right knee exploration on the 2<sup>nd</sup> day on admission and the findings were swollen right knee, abrasion wound on the inferolateral aspect of the right knee and slight bulge on the anterior aspect of the knee. About 6-cm brownish (rusted) metallic object that pierced through the anterior aspect of right patella into the femoral condyle was seen [Figure 4]. The foreign body was removed and the knee joint was irrigated with normal saline. She was placed on antibiotics and analgesics for about 5 days post-surgery; radiograph was done which confirm complete removal of foreign body. She had physiotherapy after surgery, and she regained full range of motion within 30 days post-surgery.

## DISCUSSION

Tricycle was popularised in Nigeria by Colonel Buba Marwa in the late 1990s, the then military administrator of Lagos state.



**Figure 1:** Typical overloaded tricycle on Nigerian road



**Figure 3:** X-ray showing the metallic object

It is presently a common means of transport in all parts of Nigeria, and also, the injury from its accident is also becoming more. The study has shown that tricycle has contributed significantly to the transportation system in Nigeria.<sup>[2]</sup>

The study has shown that at a speed of about 30 km/h, tricycle occupant is prone to severe injuries when accident occurs, this is because it is an open vehicle and it has lightweight and no safety device such as seat belt or airbag.<sup>[3]</sup> Studies have shown that the highest number of tricycle accidents occur within cities, also the most common cause of tricycle accident was overloading and the lower limb is commonly affected during tricycle RTA.<sup>[4,5]</sup> These reports conform to the finding in this case study as the victim was a passenger in an overloaded tricycle and the knee was affected, and the accident was on a major road in an urban area. It is then logical to restrict tricycle from plying major roads in the cities and also to limit the number of passengers and loads carried by tricycle to that within its capacity.

The economic loss incur by this patient in terms of hospital expenses and being absent from her business during the treatment period was much when compared to what she would have spent on available alternative safer means of transportation like a taxi or a bus.<sup>[6,7]</sup> Although a taxi or a bus may be more expensive than a tricycle, safety should be the priority.



**Figure 2:** Metallic object berried in the knee joint



**Figure 4:** The metallic object removed

The patient reported was lucky to have recovered fully from the injury she sustained, this may not be the story at all time and hence safety behaviour should always be emphasised when riding in a tricycle. Such injury to a passenger in a moving tricycle due abnormal sitting position has not been reported in the past, hence this case report.

## CONCLUSION

Safety of the occupants in a tricycle can be improved by proper sitting position and also by avoiding the use of tricycle on the major road in the urban areas.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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