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Prevalence of Anterior Knee Pain in Patients with Tibia Fractures Post Intra Medulary Nailing

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ABSTRACT: Tibia and fibula are most common places of fractures in lower limbs caused by high energy traumas. There were many treatments for these fractures so far, Intra Medulary Nailing is one of the most important treatments with complications such as anterior knee pain, neurovascular injury and nail fracture. Anterior knee pain is the most common complication. This is a prospected cross sectional study on patients with tibia fracture referred to Shahid Rajaei Hospital, Tonekabon and Imam Sajjad Hospital in Ramsar in 2011, treated with IMN. Data collected, including demographics, knee pain and ability to squat 1 and 3 months after operation. They were analyzed with SPSS 18.0. P<0.05 was considered as significant. A total of 80 patients participated in this study that 46.3 percent of them aged between 20 to 30 years old. Anterior knee pain was seen in 86 % and 75 % and difficult squatting was seen in 91 % and 73 % of patients, one and three months after surgery, respectively. This study showed that anterior knee pain is a common complication of IMN therapy. Retrospective and prospective studies are needed for more general results.

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Key words: Knee Pain, Lysholm, Intra Medulary Nailing, Squatting test.

INTRODUCTION

Tibia and fibula are most common places of fractures in lower limbs caused by high energy traumas. These fractures have significant financial burden, yet because of significant loss of work time, they have significant indirect adverse effects too (Goldberg, 1991; Gunther et al., 2003). These fractures can cause damage to knee, like ligament tearing and cartilage lesions. These fractures caused by high energy traumas and are more common in young men (Stadler et al., 2002; Locke, 1999).

So, early treatment can prevent complications and disabilities of these fractures. There were many treatments for these fractures so far, like external fixator casting, plaque stabilizing and Intra Medulary Nailing. Some of complications after Intra Medulary Nailing surgery are anterior knee pain, neurovascular injury and nail fracture. Anterior knee pain is the most common complication.

MATERIALS AND METHODS

This is a prospected cross sectional study on patients with tibia fracture referred to Shahid Rajaei Hospital, Tonekabon and Imam Sajjad Hospital in Ramsar in 2011, treated with Intra Medulary Nailing. Data collected, including demographics, knee pain and ability to squat 1 and 3 months after operation. We classified pain according to Lysholm system into 5 grades from painless to persistent pain.

Squatting was measured according to Likert grading from grade 1 (without difficulty in squatting) to grade 4 (serious problems in squatting). Written informed consents were obtained from all included patients. Results were analyzed with SPSS 18.0. P<0.05 was considered as significant.

RESULTS AND DISCUSSION

A total of 80 patients were participated in this study, from which 3 (8.3 %) were women and 77 (96.3%) were men. Thirty seven patients aged between 20 to 30 years (46.3%), 16 patients were aged between 41 to 50 years old (20%) the other four patients were 51 to 60 years old (5%)(Figure 1).

Eleven patients (13.8 %) were painless one month after surgery, 16 patients (20%) had persistent pain post operatively. These measurements were 20 (25%) and 5 (6.3%), three months after surgery respectively (Figure 2).

Diagram 2 shows the results of squatting tests one and three months after surgery. As we can see in diagram 3, one month after operation, 7 patients didn't have any problems in squatting, but 46 patients had serious problems. Tests three months after operation, showed 21 patients without difficulty in squatting and 7 patients with serious problems (Figure 3).

According to chi-square test, there were no significant relationship between sex and knee pain and squatting grading one month after surgery, but these scores had significant relationships with age, knee pain, and ability to squatting three months after surgery (chi 2 =8.69, P<0.01)

Tibia and femur are most common places of fractures in lower limbs caused by high energy traumas. These fractures have significant financial burden, yet

because of significant loss of work time, they have significant indirect adverse effects too. So early treatment can prevent complications and disabilities of these fractures (Tibesku et al.,2005; Wiss, 1999).

Intra Medulary Nailing has revolutionized treatment of long bone fractures and adopted worldwide, surgeons usually this method in fractures of femur, tibia and humerus, because it is accompanied by less duration of hospitalization, disability and it has less complications as malunion, delayed union, besides in this method there is no need for external fixators and joints and bones function returns immediately (Friedeman, 1999; Shepherd et al., 2002; Rademakers et al., 2004). Most fractures of the tibia occur between 20-30 years old. Data in the U.S., Scotland and Sweden showed the highest incidence of these fractures between 15-19 years. In the present study, the highest incidence was in the age group of 20 to 30 years that is much more important (Arnoczky, 1999). A previous study on the prevalence of anterior knee pain after intra Medulary Nailing in patients with tibia fractures showed that 56.2 % of patients had anterior knee pain who were younger (Wyrsch et al., 2003). Most patients had mild pain but significant impairments were seen in kneeling in 91.8 % and 33.7% of patients had rest pain. Nail withdrawal causes symptoms in nearly all patients. Findings about anterior knee pain as a common complication of IMN is consistent with previous results.

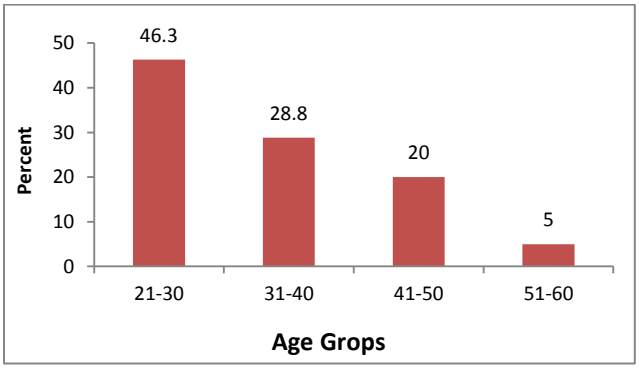

Figure 1. Patients' age groups

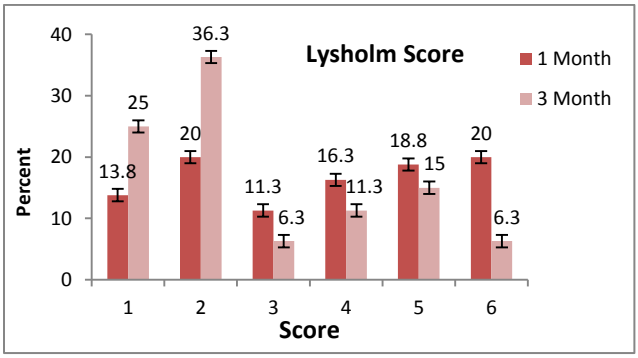

Figure 2. Lysholm Score after Intra Medulary Nailing

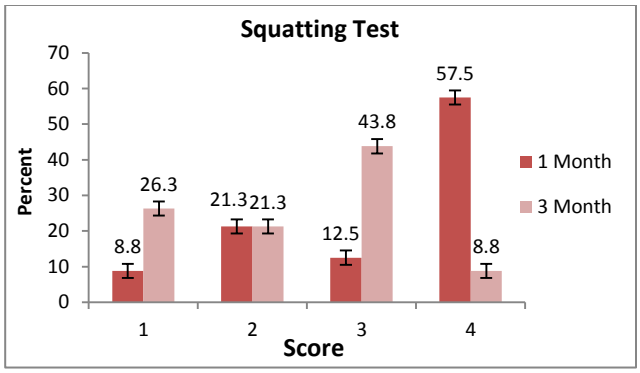

Figure 3. Squatting score after Intra Medulary Nailing

CONCLUSION

As IMN is so common in our country, it is better to find other therapies to reduce complications and disabilities. It is necessary to advice follow up and regular visits post operation to use health care services and prevent possible complications for better treatment.

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