

## Original Research

### Assessment of Complication rate following orthopedic surgery

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#### ABSTRACT:

**Background:** The musculoskeletal system involves a diverse organization of tissues exposed to a complex series of biological and mechanical stimuli. Postoperative complications are continuous threats to the wide range of patients undergoing surgical interventions. Hence; under the light of above mentioned data, the present study was undertaken for assessing complication rate following orthopedic surgery. **Materials & methods:** A total of 150 orthopedic surgical procedures were evaluated during the study period. Complete demographic and clinical details of all the surgical procedures were evaluated. Data of each patient was scrutinized and postoperative records were analysed. Complications if any, were recorded in separate excel sheet and were evaluated. Demographic data of patients with complications was also evaluated. All the results were recorded in Microsoft excel sheet and were analysed by using SPSS software. **Results:** Complications were found to be present in 22 percent of the subjects. Out of 33 patients in which complications were found, superficial and deep wound infections were found to be present in 24.24 percent and 15.15 percent of the patients respectively. Prosthesis reduction, wound hematoma and wound dehiscence were found to be present in 21.21 percent of the patients each. **Conclusion:** The overall complication rate after orthopedic surgery was 22%. The report of postoperative complications is an important tool to measure the standard of care.

**Key words:** Orthopedic, Complications

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#### INTRODUCTION

The musculoskeletal system involves a diverse organization of tissues exposed to a complex series of biological and mechanical stimuli. A thorough understanding of the normal biology of the musculoskeletal tissues, the behavior of these tissues associated with disease and injury, and the underlying mechanisms of musculoskeletal tissue regeneration is necessary to address the growing burden of disease. Research programs, both in developed and developing countries, must target those orthopedic conditions of greatest importance to their populations in order to diminish the societal and economic burdens caused by an inability to resume necessary physical function. The potential areas for investigation within the field of orthopedics continue to grow, particularly as the basic and applied body of scientific knowledge and technology develop.<sup>1-3</sup>

Postoperative complications are continuous threats to the wide range of patients undergoing surgical interventions. The increase of postoperative complications can lead to long-term disability and probably death. Some of postoperative complications can be related to operations, such as haemorrhage or wound infection. Moreover, complications after surgery for prosthetic fracture can be dangerous. Length and type of procedure, anaesthesia to be used, and familiar required position may increase the probable postoperative complications. All surgical procedures, simple or compound, repetitive or unusual, can be associated with complications. In addition, any surgical procedure can be accompanied with some bleeding in major operation. Early postoperative haemorrhage throughout the immediate postoperative period commonly indicates insufficient operative haemostasis or a technical accident, such as a slipped ligature or undiagnosed trauma to a blood vessel. Postoperative haemorrhage may occur after

several days, which may be late. It is commonly related to infection, which is commonly occurred in the late postoperative period.<sup>4-7</sup> Hence; under the light of above mentioned data, the present study was undertaken for assessing complication rate following orthopedic surgery.

### MATERIALS & METHODS

The present study was undertaken for assessing complication rate following orthopedic surgery. A total of 150 orthopedic surgical procedures were evaluated during the study period. Complete demographic and clinical details of all the surgical procedures were evaluated. Data of each patient was scrutinized and postoperative records were analysed. Complications if any, were recorded in separate excel sheet and were evaluated. Demographic data of patients with complications was also evaluated. All the results were recorded in Microsoft excel sheet and were analysed by using SPSS software.

### RESULTS

In the present study, data of 150 subjects who underwent orthopedic surgical procedures was scrutinized. Among these patients, complications were found to be present in 22 percent of the subjects. Out of these 33 subjects, 24.24 percent of the subjects belonged to the age group of less than 40 years while 45.45 percent of the subjects belonged to the age group of more than 60 years. 63.64 percent of the subjects were males while the remaining were females. Superficial and deep wound infections were found to be present in 24.24 percent and 15.15 percent of the patients respectively. Loss of implant reduction and deep venous thrombosis were found to be present in 21.21 percent and 18.18 percent of the patients respectively. Prosthesis reduction, wound hematoma and wound dehiscence were found to be present in 21.21 percent of the patients each.

**Table 1: Incidence of complications**

Complications	Number	Percentage
Present	33	22
Absent	117	78
Total	150	100

**Table 2: Age and gender-wise distribution of patients with complications**

Variable		Number	Percentage
Age group	Less than 40	8	24.24
	40 to 60	10	30.3
	More than 60	15	45.45
Gender	Males	21	63.64
	Females	12	36.36

**Table 3: Type of complications**

Complications	Number	Percentage
Superficial wound infection	8	24.24
Deep wound infection	5	15.15
Loss of implant reduction	7	21.21
Deep Venous thrombosis	6	18.18
Prosthesis dislocation	8	24.24
Wound hematoma	7	21.21
Wound dehiscence	7	21.21

### DISCUSSION

Orthopedic surgery is a specialty of surgery dedicated to the prevention, diagnosis, and treatment of diseases and injuries of the musculoskeletal system in all age groups. Careers in orthopedic surgery span the spectrum from general orthopedics to those of subspecialty expertise in orthopedic trauma, hand, pediatrics, total joint, foot and ankle, sports medicine, and oncology to name a few. In orthopaedic surgical practice, complications are often recognised quickly and intuitively. Analysis in the literature is more difficult. There is no standard definition of a surgical complication; the definition of a complication is often assumed to be understood but it is seldom provided.<sup>8-</sup>

<sup>10</sup> Hence; under the light of above mentioned data, the present study was undertaken for assessing complication rate following orthopedic surgery.

In the present study, data of 150 subjects who underwent orthopedic surgical procedures was scrutinized. Among these patients, complications were found to be present in 22 percent of the subjects. Out of these 33 subjects, 24.24 percent of the subjects belonged to the age group of less than 40 years while 45.45 percent of the subjects belonged to the age group of more than 60 years. 63.64 percent of the subjects were males while the remaining were females. Willhuber GC et al determined the prevalence and severity of postoperative

complications in the department of orthopedic unit in a tertiary hospital. A retrospective review from the postoperative complication registry of a cohort of consecutive patients operated in the department of orthopedic surgery was performed. The overall 90-day complication rate was 12.7% (249/1960). Twenty-three complications (9.2 %) were type I, 159 (63.8%) type II, 9 (3.6%) type IIIa, 42 (16.8%) type IIIb, 7 (2.8%) type IVa and 9 (3.6%) were grade V according to Dindo-Clavien classification (DCC). The most frequent complication was anemia that required blood transfusion (27%) followed by wound infection (15.6%) and urinary tract infection (6%). The overall complication rate after orthopedic surgery in our department was 12.7%.<sup>11</sup>

In the present study, superficial and deep wound infections were found to be present in 24.24 percent and 15.15 percent of the patients respectively. Loss of implant reduction and deep venous thrombosis were found to be present in 21.21 percent and 18.18 percent of the patients respectively. Prosthesis reduction, wound hematoma and wound dehiscence were found to be present in 21.21 percent of the patients each. Helal et al, in another study, assessed the complications that may occur in postoperative patients after orthopaedic surgery and find out the relationship between postoperative complications and other variables such as (age, gender, etc.). 100 adult patients who had orthopaedic surgeries in upper and lower extremities were evaluated. The patients were observed and assessed after their admission for 5 days. Results The results of this study indicated that a high percent of postoperative complications occurred in age between 18 and 27 years. The highest percentage (38%) of patients was smokers. Medications used had an effect on postoperative complications especially corticosteroids. The rate of infection among smokers was more compared to non-smoker patients, with significant relation. The demographic features of 100 postoperative patients indicated that the majority of the sample patients were males.<sup>12</sup>

## CONCLUSION

The overall complication rate after orthopedic surgery was 22%.The report of postoperative complications is an important tool to measure the standard of care.

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