



Patterns of Orthopaedic Management at a Regional Referral Hospital in Western Uganda

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Introduction

The demand for orthopaedic care in Uganda is high, due to high rates of limb injury, especially from road traffic injuries [1-3]. This is due to a variety of factors including high levels of urbanization, poor infrastructure, passenger overload, lack of certified training/licensing, limited regulation, and law enforcement [4]. However, many regions of Uganda have limited access to needed orthopaedic care [3]. Although some studies have analyzed the causes and patterns of orthopaedic injury in Uganda, there is little data surrounding the management of their care [5]. This study measures the prevalence, supervision, and types of orthopaedic procedures among patients admitted to the surgical ward of a referral hospital in Western Uganda.

Methodology

A retrospective cohort study was conducted including all orthopaedic procedures documented in the surgical ward registry that could be verified with patient records at the Mbarara Regional Referral Hospital (MRRH), located in Western Uganda, within a 10-month (October 2018 – July 2019) period. Pertinent information was documented from the surgical ward registry, including the date of admission, presenting problem, date of surgery, surgery performed, and the provider who performed the surgery. Data were organized and analyzed using statistical software.

Figure 1. Types of Orthopaedic Problems at MRRH

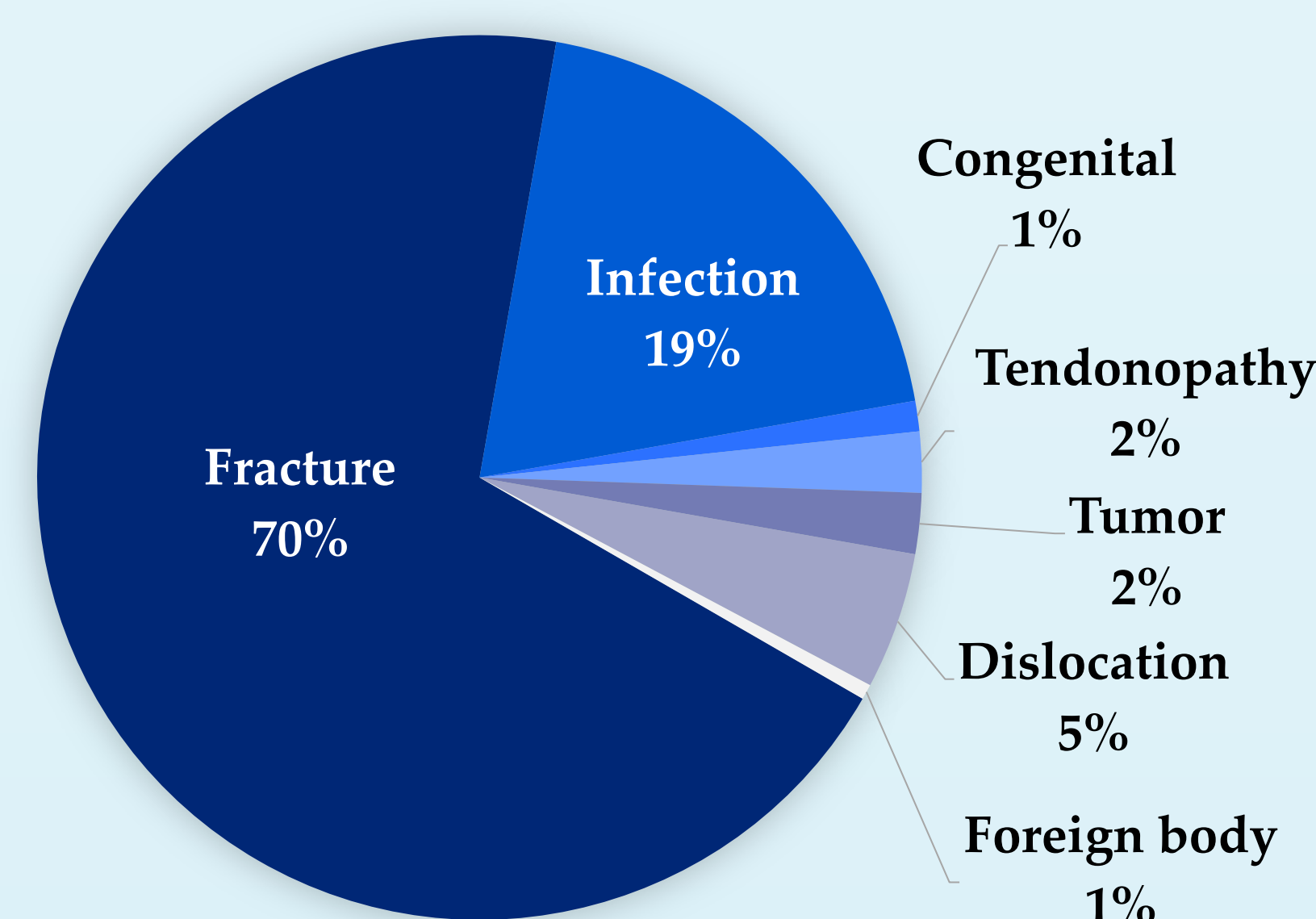


Table 1. Analysis of Orthopaedic Procedures at MRRH

Procedure	Total	Orthopaedic Surgeon	Orthopaedic Officer ¹	Other Surgeon ²	Percentage performed by Orthopaedic Surgeon (%)
Internal fixation	49	48	0	1	98.0
Debridement	44	6	7	31	13.6
External fixation	37	27	7	3	73.0
Immobilization	16	1	0	15	6.3
Amputation	12	4	0	8	33.3
Hemiarthroplasty	11	11	0	0	100.0
Sequestrectomy	8	6	0	2	75.0
Biopsy	5	3	1	1	60.0
Fasciotomy	3	0	0	3	0.0
IMN Removal	2	2	0	0	100.0
Osteotomy	2	2	0	0	100.0
STSG	2	0	0	2	0.0
Tendon Repair	2	1	0	1	50.0
Closed reduction	1	0	1	0	0.0
Exploratory	1	0	0	1	0.0
Total Procedures	195	111	16	68	56.9
Percentage (%)		56.9	8.2	34.9	

1. Orthopaedic officers receive three years of post-secondary training and two years of internship
2. Other surgeon is defined as any surgeon/resident other than an orthopaedic surgeon/resident

Results

There were 159 orthopaedic patients and 195 orthopaedic procedures documented in the MRRH OR registry over this 10 month period that could be verified with patient records. Fractures were the most common injury seen (125, 69.4%), most commonly involving the lower limbs (101, 80.8%). Infection was the second most common reason for surgery at MRRH (19%), which included wound infections, osteomyelitis, and necrotic etiologies.

Internal fixation was the most common procedure performed (47, 24.1%), of which 97.9% were performed by an orthopaedic surgeon with an average wait time of 11 days. Surgical debridement was the second most common procedure (41, 21%), with only 14.6% being performed by an orthopaedic surgeon with an average wait time of 5.5 days, compared to a wait time of 4.0 days when performed by someone other than an orthopaedic surgeon. The longest recorded time from admission to surgery was 4 months, which was for a femur fracture that was managed with a Girdlestone.

The orthopaedic surgeon performed the majority (56.9%) of orthopaedic procedures, especially those procedures requiring mechanical implantation. An orthopaedic officer performed 8.2% and another surgeon performed 34.9% of total procedures.

Table 2. Average Time (In Days) From Admission to Orthopaedic Procedure at MRHH

Procedure	Orthopedic Surgeon	Other Surgeon
Internal fixation	11.1	13.0
Debridement	5.5	4.0
External fixation	12.8	6.0
Immobilization	9.8	13.0
Amputation	4.0	12.3
Hemiarthroplasty	14.6	-
Sequestrectomy	10.5	6.0
Biopsy	4.7	9.0
Fasciotomy	1.0	1.3
IMN Removal	4.5	-
Osteotomy	9.0	-
STSG	-	14.5
Tendon Repair	1.0	2.0
Closed reduction	-	-
Exploratory	-	6.0

Conclusion

This study describes the orthopaedic procedures done at Mbarara Regional Referral Hospital over a 10-month period. The most common procedures are for fractures and infections. A number of orthopaedic procedures, most commonly debridements, are done by providers other than consultant orthopaedic surgeons. In a setting with few orthopaedic surgeons, this highlights an opportunity for educating general surgeons in basic orthopaedic principles and management to improve the orthopaedic capacity of a hospital. This could lead to more timely access to orthopaedic operations, while allowing the orthopaedic surgeon to focus on more highly specialized procedures.

Recommendations

In settings with a shortage of orthopaedic surgeons, increased education and surgical training for general surgery residents, who frequently staff the regional referral hospital surgical wards, may improve access to timely orthopaedic care. Increased funding and recruitment for orthopaedic training programs and for supporting orthopaedic surgeons outside of major urban settings may also improve access to care in the district hospital.

References

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