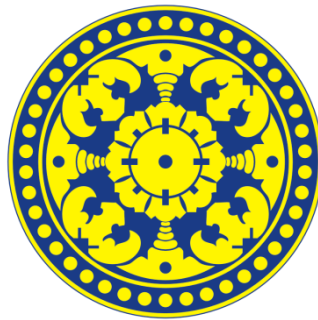


**Profile of Hand Injury from Januari – December 2013
in Sanglah General Hospital
Descriptive Study**



dr. Agus Eka Wiradiputra

dr. A.A. Gede Yuda Asmara, SpOT

**PROGRAM PENDIDIKAN DOKTER SPESIALIS I
BAGIAN/SMF ORTHOPAEDI DAN TRAUMATOLOGI
UNIVERSITAS UDAYANA**

2014

**Profile of Hand Injury from Januari – December 2013
in Sanglah General Hospital
Descriptive Study**

Agus Eka Wiradiputra*AA Gede Yuda Asmara**

***Resident of Orthopedic and Trauma, Faculty of Medicine Udayana University,
Sanglah Hospital**

****Orthopaedic and Traumatology Staff, Udayana University, Sanglah General
Hospital, Denpasar**

Profile of Hand Injury from Januari – December 2013 in Sanglah General Hospital

Background

Injuries to the hand can pose a challenge for the emergency physician. These injuries are not life threatening, however, the complexity of the area can pose many diagnostic and treatment dilemmas. The anatomy of the hand is complex, which allows for the dexterity, strength, and adaptability of the most functional aspect of the musculoskeletal system.

Twenty percent of patients attending Accident and Emergency Departments have hand injuries, equating to more than 1.36 million attendances for hand injuries in the UK each year. One in five of these injuries (271,000) require specialist care, and 71,000 patients require surgery. These estimates are consistent with the annual incidence of hand fractures at all ages of 3.6 per 1000 in British Columbia, Canada and the UK incidence for adults and children of 1.8 and 2.6 per 1000 respectively.

Hand injuries predominantly affect the young working population and are a major source of disability, causing significant costs to individuals and society through time away from work. Improvements in health and safety practices and legislation have reduced the incidence of mangled hand injuries in developed countries, but these injuries still occur and require urgent treatment that may involve many hours in the operating theatre.

The evaluation and management of injuries to this area can be time consuming and pose a significant medicolegal risk to the emergency physician. Improperly diagnosed and managed injuries can lead to chronic pain, inability to perform activities of daily living, and even seemingly minor injuries can lead to missed work causing a significant cost to the individual and society.

Aim

To provide an analysis of recent hand injuries in Sanglah Hospital from Januari – December 2013, focussing in particular on presentations to emergency departments and admissions to hospital.

Benefit

Knowledge of hand injury profile in Sanglah Hospital 2011-2013 can help clinician in designing a better diagnostic studies and treatment plans that can used to treat patients effectively and minimize their exposure to risk. Also to decrease the prevalence of hand injury due to increase of community awareness

Research Design

The research design is Descriptive Retrospective

Location and Time of Research

Sanglah General Hospital, January – December 2014

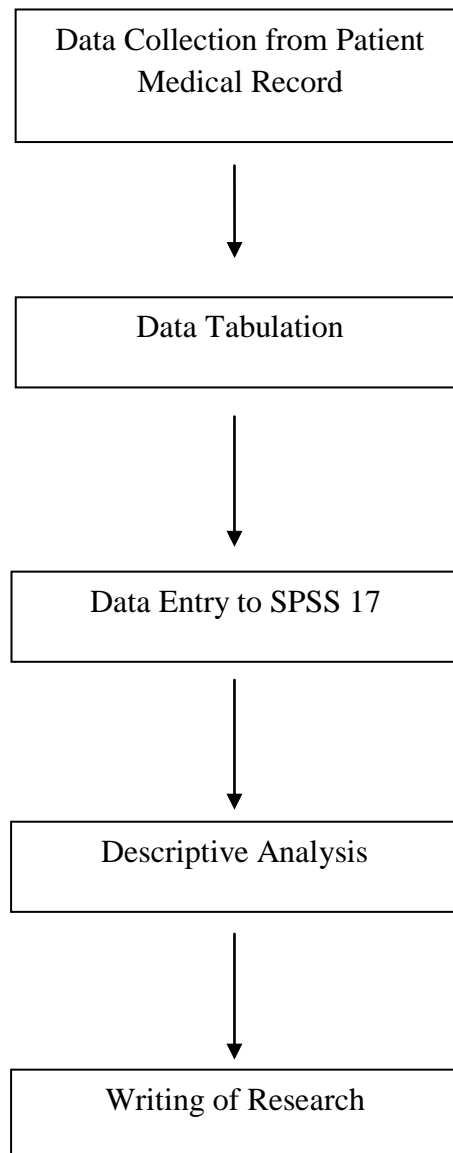
Data Source

Secondary data from patient medical record that came to emergency department of Sanglah General Hospital.

Instrument of Research

Tabulation table including patient identity, medical record number, clinical notes, X-rays, and operative findings of the patients supplemented with clinical photograph.

Procedure of Research



Schema 1. Research Procedure

METHODS

A review was made of admitted patients of hand injuries in our Emergency Department from January-December 2013. We analyze 102 patient with variety demographic pattern, mechanism of injury, type of injury and treatment was made to get the different aspects of hand injuries in these study

We described the injury description from clinical photographs, x rays, and operative notes. Patients with severe injuries had amputations of part or whole of the hand, which led to terminalization operations in many cases and to severe disability and stiffness. Hand injuries of the hand were treated with both operatif and nonoperatif procedure depending on the

extent of the injury, which was highly variable. The primary aim of management was maximal preservation of function

RESULT

We identified that male sustain hand injuries more than female (87,5%,:12,5%). From the age variables, more affected population in 20-30 years old (32,7%). Hand injury also common at people with education level post secondary and above (48,1%), married people (65,4%), work as construction 36,5 % and low socioeconomic status (79,8%). High energy mechanism of injury (96,2%) is the most cause of hand injuries. Nature of injury seem more cause by motorcycle accident 35,6%. Fracture are most common injury tipe 54,8% and surgical treatment more often done (72,1%) in Sanglah General Hospital from January 2013 until December 2013. All of these data tabulation show at at table 1-11

DISCUSSION

Most of the victims of hand injury were males (87,5%), 32,7% aged 21 to 30 years, 65,4% were married, 48,1% were post secondary and above education level. This indicates that young, males are particularly prone to injuries. Males are more likely to perform hard labour and are therefore at increased risk of injuries at work. Young and illiterate subjects are usually less likely to be familiar with the jobs nature and could be more reckless. Thus, having educated workers with a sense of responsibility about their job appears important to preventing work-related injuries. Our data shown different result to prior study.

The Royal Hospital for Sick Children's (Glasgow) Accident and Emergency Department sees fingertip injuries which account for 1.8% of its workload. In the other research, The National Institute for Occupational Safety and Health in the United States conducted a survey across multiple emergency departments in 1982, and estimated occupational finger injuries to account for 25.7% of its workload. Our study result nearly similar that show 35,6% hand injuries suffered for construction working people, 26% student, 18.3% agriculture and 20.2% unclassified. This is probably due to the tasks being undertaken and the equipment being used which has the potential to exert large forces directly or indirectly to the hand and wrist.

Hand injury in our study report 79,8% case affect low income people. Low-income families living in poor environmental conditions could be affected physically and psychologically, which could also be detrimental to work performance. Lower socio-economic status workers

are at greater risk of occupational hand injuries, partly because they usually have more physically demanding jobs, poorer health status, and are more likely to be smokers and/ or alcohol dependent.

In studies conducted around the world, equipment malfunction and equipment or jobs that the workers were not used to were common risk factors for injury in the workplace. Adequate protective equipments such as protective gloves are also regulations that should be enforced. Same result for our study that show grinder accident (6,7%) happen more then the other type injury of worker exclude motorcycle accident.

Nature of disease seem more cause by motorcycle accident 35,6%. Fracture are most common injury tipe 54,8% and surgical treatment more often done (72,1%). Some injury episodes will result in the injured person being recorded in more than one data set, but many injured persons will only be recorded in one or no data sets. The extent of overlap between the various data sources is not known. However, it is clear that to gain a full appreciation of the extent of hand injury in the community, information will be required from several different sources. In addition, one of the keys to developing effective interventions aimed at preventing injury is having a good understanding of the characteristics of the injured persons, their injuries, and the circumstances in which the injuries occurred. Since each data source probably has characteristic injuries with characteristic injury circumstances, it is necessary to examine information from a range of data sources in order to plan appropriate interventions.

CONCLUSION

Hand injuries have previously been shown to be an important reason for presentation at emergency departments. Fingertip injuries should not be taken lightly as they can result in significant morbidity if poorly treated. Functional as well as aesthetic considerations have to be taken into account when treating fingertip injuries. Most fingertip injuries can be treated by the family or emergency physician, but there are some conditions that require referral to hand surgeons for optimal management.

It is important to choose the selective treatment of the hand injury and should be considered with characteristic of the patients. We found similarities as well as difference in result compared to previous studies. This study add our knowledge about hand injuries in balinesse population

References

1. Schoffl, Volker. *Tendon Injuries of The Hand*. Baishideng 2012.
2. C J, Yeo. *Finger Tip Injuries*. Singapore 2010.
3. Monteleone, Guy. *Hand and Finger Injuries*. West Virginia 2010.
4. Abraham, Michael K. *The Emergent Evaluation and Treatment of Hand and Wrist Injuries*. Baltimore 2010.
5. Garg, Rajesh. *Epidemiology of Occupational Hand Injury in Hong Kong*. Hong Kong 2012.
6. Brennen, Michael. *Hand Surgery in The UK*. England 2007.
7. Driscoll, Tim. *Work-related Hand and Wrist Injurie in Australia*. Australia 2008.

Table 1

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10-20	23	22.1	22.1	22.1
	20-30	34	32.7	32.7	54.8
	30-40	16	15.4	15.4	70.2
	40-50	31	29.8	29.8	100.0
	Total	104	100.0	100.0	

Table 2

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	91	87.5	87.5	87.5
	female	13	12.5	12.5	100.0
	Total	104	100.0	100.0	

Table 3

		Education			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	illiterate	6	5.8	5.8	5.8
	primary school	8	7.7	7.7	13.5
	secondary school	40	38.5	38.5	51.9
	post-secondary and above	50	48.1	48.1	100.0
	Total	104	100.0	100.0	

Table 4

		Marital			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single	36	34.6	34.6	34.6
	married	68	65.4	65.4	100.0
	Total	104	100.0	100.0	

Table 5

		Occupation			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	27	26.0	26.0	26.0
	agriculture	19	18.3	18.3	44.2
	construction	37	35.6	35.6	79.8
	unclassified	21	20.2	20.2	100.0
	Total	104	100.0	100.0	

Table 6

		SocialEconomy			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	83	79.8	79.8	79.8
	moderate-high	21	20.2	20.2	100.0
	Total	104	100.0	100.0	

Table 7

		Velocity			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low energy	4	3.8	3.8	3.8
	high energy	100	96.2	96.2	100.0

Velocity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low energy	4	3.8	3.8	3.8
	high energy	100	96.2	96.2	100.0
	Total	104	100.0	100.0	

Table 8

InjuryType

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	superficial injuries of hand	4	3.8	3.8	3.8
	open wound of hand	8	7.7	7.7	11.5
	fracture of hand	57	54.8	54.8	66.3
	finger dislocation	4	3.8	3.8	70.2
	tendon injuries of hand	15	14.4	14.4	84.6
	crush injuries of hand	5	4.8	4.8	89.4
	traumatic amputation of hand	11	10.6	10.6	100.0
	Total	104	100.0	100.0	

Table 9

MOI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	attack by sword	2	1.9	1.9	1.9
	blast accident	6	5.8	5.8	7.7
	boat accident	1	1.0	1.0	8.7
	cabinet injury	1	1.0	1.0	9.6
	car accident	3	2.9	2.9	12.5
	chain accident	1	1.0	1.0	13.5
	chainsaw	3	2.9	2.9	16.3
	chilli cutting machine	1	1.0	1.0	17.3
	compressor accident	2	1.9	1.9	19.2

cutting machine accident	3	2.9	2.9	22.1
fall down	2	1.9	1.9	24.0
fall from 2m height	1	1.0	1.0	25.0
fall from height	1	1.0	1.0	26.0
fall on asphalt	1	1.0	1.0	26.9
garment machine	1	1.0	1.0	27.9
gas valve machine	2	1.9	1.9	29.8
grinder accident	7	6.7	6.7	36.5
iron accident	1	1.0	1.0	37.5
iron machine	1	1.0	1.0	38.5
iron pipe accident	1	1.0	1.0	39.4
lift accident	2	1.9	1.9	41.3
meat-cutting machine	1	1.0	1.0	42.3
motorcycle	12	11.5	11.5	53.8
motorcycle accident	37	35.6	35.6	89.4
pedestrian accident	2	1.9	1.9	91.3
rice mill accident	2	1.9	1.9	93.3
ship accident	1	1.0	1.0	94.2
slipped down	1	1.0	1.0	95.2
stuck on truck tyre	1	1.0	1.0	96.2
wood bar accident	2	1.9	1.9	98.1
wood cutter accident	2	1.9	1.9	100.0
Total	104	100.0	100.0	

Table 10

RelationToEnvironment

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid open injury	69	66.3	66.3	66.3
close injury	35	33.7	33.7	100.0
Total	104	100.0	100.0	

Table 11

		Treatment			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	conservative	29	27.9	27.9	27.9
	surgical	75	72.1	72.1	100.0
	Total	104	100.0	100.0	