

Role of anaesthesia in cattle horn injuries

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Abstract

Introduction: Cattle horn injuries are common in rural areas. Injury severity varies from minor wounds to fatal polytrauma. As most of the cases need surgical intervention, anaesthesia plays a key role from initial management to postoperative pain relief. Consideration of type of anaesthesia in such cases bears an effect on surgical outcome. **Materials and Methods:** A retrospective analysis of 19 cattle horn injuries admitted to surgical ward in SSM hospital and Mangala Hospital, Hassan between June 2010 to May 2012 was done. **Results:** 68.4% of total patients were male and 47.36% of patients had sustained abdominal injuries. Among 19 patients who were taken for surgical exploration, 11 patients (57.89%) needed spinal anaesthesia, 07 patients (36.84%) needed general anaesthesia and 1 patient (5.26%) needed local anaesthesia. 4 patients (21.05%) had intraoperative hypotension due to blood loss and needed blood transfusions. 17 patients (89.47%) reported good postoperative pain relief. **Conclusion:** Anaesthesia plays a key role in the management of cattle horn injuries. Selection of type of anaesthesia has a direct bearing on intraoperative and postoperative outcomes. Most of the patients undergoing surgery are managed with spinal anaesthesia.

Keywords: Cattle horn, Anaesthesia, Visual analog score

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Introduction

Cattle horn injuries are a special type of trauma commonly encountered in rural areas[1]. Injury spectrum extends from minor lacerations to major polytrauma. Surgical care is needed in most patients and anaesthesia plays a pivotal role in management and outcome[2]. Selection of anaesthesia is a tricky decision and needs thorough analysis of overall status of the affected patient[4]. Generally patients with isolated limb, perineal injuries can be managed by local or regional anaesthesia where as multitrauma may demand general anaesthesia. Intraoperative fluid requirement is guided by preoperative blood loss and hydration status of the patient. Postoperative pain management[3] is a key element in overall outcome of patient and has a direct bearing on the early recovery of patient.

Materials and Methods

A retrospective analysis of all the patients with cattle horn injuries admitted to the surgical ward in SSM hospital and Mangala Hospital, Hassan between June 2010 to May 2012 were considered. Injection Bupivacaine heavy(2.5ml) was used for spinal anaesthesia. In cases where general anaesthesia was considered, Injection Glycopyrolate(0.2 mg) IV, Injection Midazolam(0.03mgm/Kg), Injection Fentanyl(2 microgm/Kg), Injection Ondansetron(1mg/kg) were used as premedication followed by induction with injection propofol(2mg/kg) was done and Injection Succinylcholine (2 mg/kg) was used as a relaxant for endotracheal intubation. Maintenance of anaesthesia was done using Isoflurane (1 MAC) and Injection Vecuronium in divided doses with 50% O₂ and 50% N₂O. Rapid sequence induction was used in suspected cases of bowel injury. Reversal was done using Injection Neostigmine(0.05mg/Kg) and Injection Glycopyrolate(0.2 mg). Injection Lignocaine (2%) with

adrenaline (1:200000) was used in one case of local wound debridement. Postoperatively Injection Paracetamol 100 ml IV was used 8th hourly with Injection Tramadol 100 mg 8th hourly for pain relief in all cases. Data variables including age, gender, site of injury, surgical intervention done, type of anaesthesia given, intraoperative fluid requirement, blood transfusion, intraoperative time taken, postoperative pain relief based on Visual Analog Scale (VAS)[3] and number of days of hospital stay were tabulated. Median was calculated using simple statistical tools in the data charts.

Results and observation

On tabulation of results, it was observed that median age of the patient was 44 years. 13 out of 19 patients(68.42%) were males and 06 out of 19 patients (31.57%) were females. It was observed that 9 patients (47.36%) sustained isolated abdominal injuries. 03 patients (15.78%) had isolated chest injuries and 2 patients (10.52%) had combined abdomino-chest wall injuries. 5 patients (26.31%) sustained injuries to other sites like limbs, perineum, axilla. 7 patients (36.84%) needed general anaesthesia, 11 patients (57.89%) needed spinal anaesthesia and 1 patient (5.26%) with isolated lower limb lacerated wound needed local anaesthesia with monitoring. Mean operative time was 117.89 minutes and average intraoperative fluid requirement was 1605.26 ml. 4 patients(21.05%) developed intraoperative hypotension and needed blood transfusion. Postoperative analgesia[3] using VAS was found to be good in 17 patients (89.47%) and median hospital stay was 6.63 days.

Discussion

Cattle horn injuries form a special group of trauma management in rural areas. Thorough evaluation to focus on the injury plays a key role in decision making. Once the surgical intervention is planned, type of injury, site of injury and general condition of the patient guides towards selection of anaesthesia[2]. As a general rule patient with polytrauma needing laparotomy or thoracotomy will need general anaesthesia. Most of the below umbilicus abdominal injuries can be considered with spinal anaesthesia. Local anaesthesia is considered in selected isolated limb injuries. Even though several surgical reports have been done regarding cattle horn injuries[5-7],

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only few studies are found in literature as a part of focus on anaesthetic role in such injuries. Anaesthetic principles used in management of blunt or penetrating abdominal trauma may be used as a guide to cattle horn injury management also. But most of these injuries occur in rural setups and found to be of low grade, they can

be managed with surgical exploration under spinal or local anaesthesia. Postoperative pain relief assessed with VAS[3] and using proper analgesics good pain free postoperative period is ensured.

Table 1: Table of case description

Case Number	Age	Gender	Site of Injury	Surgery done	Type of anaesthesia given	Operative time(In min)	Intraoperative events	Intraoperative fluid used (In ml)	Postoperative pain relief	Blood transfusion	Number of days of hospital stay
1	26	M	Perineum	primary suturing	SA	90	UE	1500	Good	No	5
2	66	M	Abdomen	Primary suturing	SA	120	UE	1500	Good	No	6
3	18	F	Abdomen + Chest	Laparotomy	GA	200	Hypotension	2000	Good	1	8
4	43	F	Lower limb	Fracture fixation with wound debridement	SA	150	UE	2000	Good	No	10
5	57	M	Axilla & chest	Primary suturing	GA	100	UE	1500	Good	No	5
6	44	M	Abdomen	Primary suturing	SA	60	UE	1000	Good	No	3
7	35	M	Chest	Primary suturing + ICD	GA	120	UE	2000	Moderate	No	6
8	33	M	Abdomen	Laparotomy	GA	150	UE	2000	Good	No	7
9	28	M	Lower limb	Primary suturing	LA	60	UE	1000	Good	No	3
10	48	F	Abdomen	Laparotomy	SA	120	UE	1500	Good	No	6
11	56	F	Perineum	Primary suturing	SA	90	UE	1500	Good	No	5
12	29	M	Abdomen	Laparotomy	SA	120	UE	1500	Good	No	7
13	46	M	Abdomen	Primary suturing	SA	100	UE	1500	Good	No	5
14	76	M	Abdomen	Laparotomy	SA	150	UE	2000	Good	No	9
15	53	M	Abdomen	Primary suturing	SA	100	UE	1000	Good	No	5
16	44	F	Vagina	Primary suturing	SA	90	UE	1000	Good	No	6
17	56	M	Abdomen + Chest	Laparotomy	GA	150	Hypotension	2000	Good	1	10
18	43	F	Chest	ICD + Suturing	GA	120	Hypotension	2000	Moderate	1	8
19	53	M	Abdomen	Laparotomy	GA	150	Hypotension	2000	Good	2	12

Table 2. Descriptive analysis of demographic data

Variable	Description
Median Age (In years)	44
Male: Female	13:06
Site of Injury	
Abdomen	09(47.36%)
Chest	03(15.78%)
Abdomen+ Chest	02(10.52%)

Others	05 (26.31%)
Type of anaesthesia	
General	07 (36.84%)
Spinal	11 (57.89%)
Local	01 (5.26%)
Mean operative time (In minutes)	117.89
Average intraoperative fluid use(In ml)	1605.26
Patients developing hypotension	04 (21.05%)
Good postoperative analgesia	17 (89.47%)
Blood transfusion needed	04 (21.05%)
Mean hospital stay (in days)	6.63

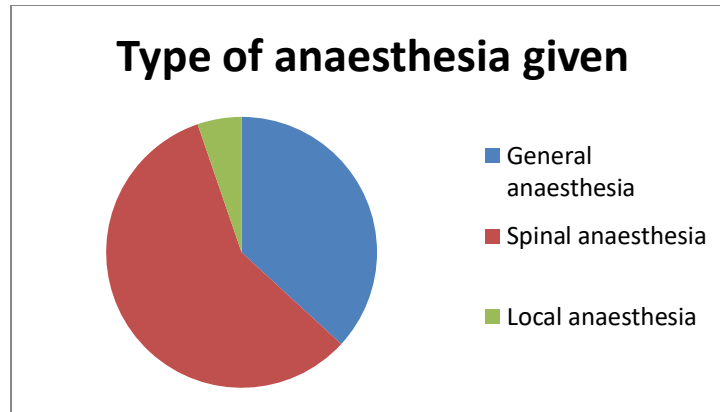


Fig 1: Pie chart representing type of anaesthesia given

Conclusion

Anaesthesia plays a key role in the management of cattle horn injuries. Selection of type of anaesthesia has a direct bearing on intraoperative and postoperative outcomes. Most of the patients undergoing surgery are managed with spinal anaesthesia. Further studies regarding use of patient controlled analgesia in management of such cases is needed to hasten the pain free postoperative stay of a patient.

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