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RECOVERY ROOM INCIDENTS

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Abstract

Monitoring of patients in the recovery room is considered the most serious part for safe anesthesia. Anesthesiologists are some times so busy in completing the list of the operations so they can not follow up thoroughly their discharged patient from the theatre. This study determines the most common recovery room incidents in the last three years at AlSadir Teaching Hospital in Basrah. Of the about 7000 patients operated upon in this period, 669 patients (9.5%) had some event in the recovery room. The most common incident was respiratory problems (26%), irritability (22%), thermal (19%), cardiovascular (18%), nausea and vomiting (9%), low urine output (5%) and fall from couch (1%). Most of these incidents were treated immediately at the recovery room. The outcome was 5 deaths and 61 ICU admissions. Skilled anesthesia assistant present in the recovery room is the keystone for taking care and reducing recovery room incidents.

Introduction

Mishaps and incidents in the recovery room are not uncommon and they vary from trivial to lethal events. Although patients are discharged from the operating theatre to the recovery room in good condition but still there is a great risk in this area which should be well considered.

No much information was written in the literature about the recovery room incidents.

Many parameters were implicated for these incidents; on the top is the presence of a adequate well trained anaesthetic assistant in the recovery room[1], the type of surgery, type of anaesthesia, skill of the anaesthesiologist, availability of good monitoring equipments are also other important factors.

Clinical observation was the commonest way to detect these events although pulse oximeter and other tools were also of a great assistance to detect these events.

In an Australian study of 2000 incident reports, they found that 6% of the patients had recovery room incidents. The most common events were respiratory incidents (69%) and cardiovascular incidents (19%)[2]. In another New Zealand study, they found that 5% of the patients had recovery room incidents and the most common were also respiratory (43%) and cardiovascular (24%)[3].

This study aimed to determine the type and the extent of recovery room incidents in our hospitals and how we can reduce their occurrence.

Patients and method

Six hundred and sixty nine incidents occurred in the recovery room in the last 3 years at Alsadir Teaching hospital, these represent 9.5% of about 7000 patients who underwent surgery under general anaesthesia. All patients included in this study were American Society of Anesthesiologists (ASA) class I & II and had ordinary general anaesthesia.

Devices in the recovery room are; pulse oximeter, oxygen generator, ventilators, suction device and anaesthesia machine.

The diagnosis of most of these incidents was made by anaesthesia assistants who are present in the recovery room.

Action taken for each event was mainly done initially by the assistant and on some times the available anaesthesiologist. Once there is an incident, the responsible anaesthesiologist for that case is informed.

Results

It is common in a busy day practice to have some recovery room incidents along with that occurring in the operating theatre. The main recovery room incidents in this study were; respiratory problems (26%), irritability (22%), thermal (19%), cardiovascular (18%), nausea and vomiting (9%), low urine output (5%) and fall from couch (1%) as shown in figure 1.

Figure 2 showed the types of respiratory incidents, commonly upper airway obstruction (73 cases) and recurarization (65 cases).

Fig.1: Main recovery room incidents.

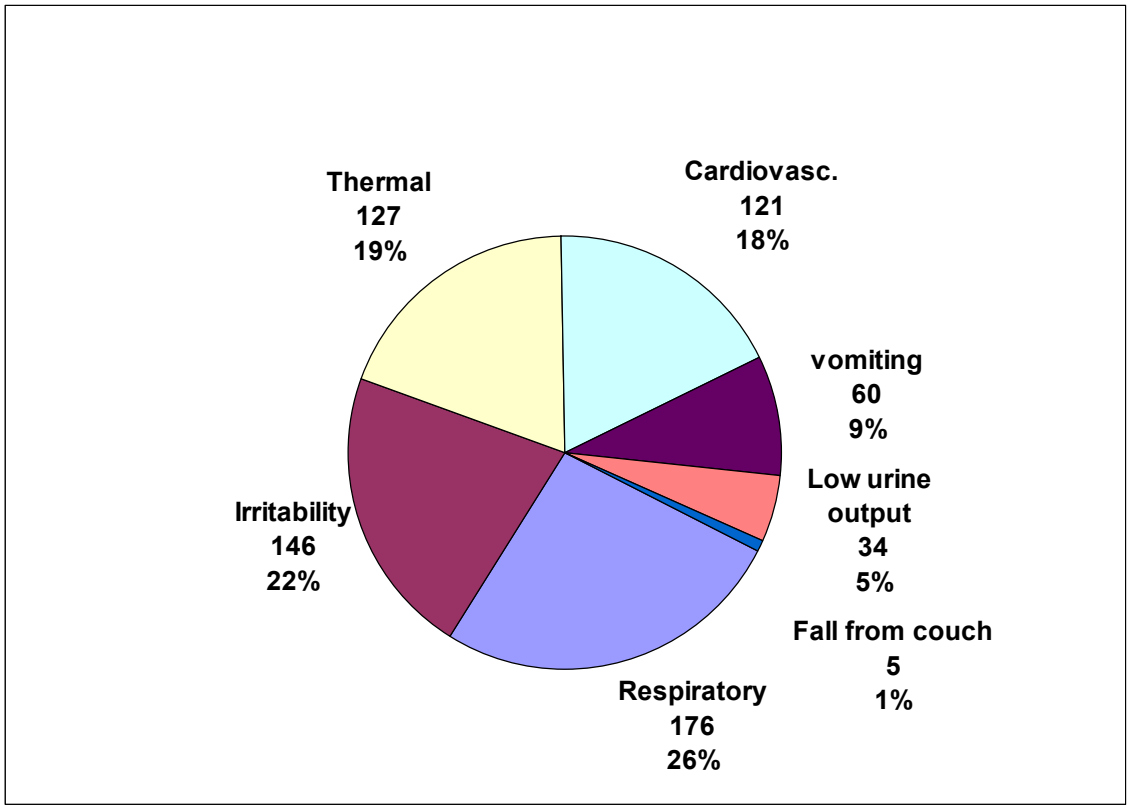
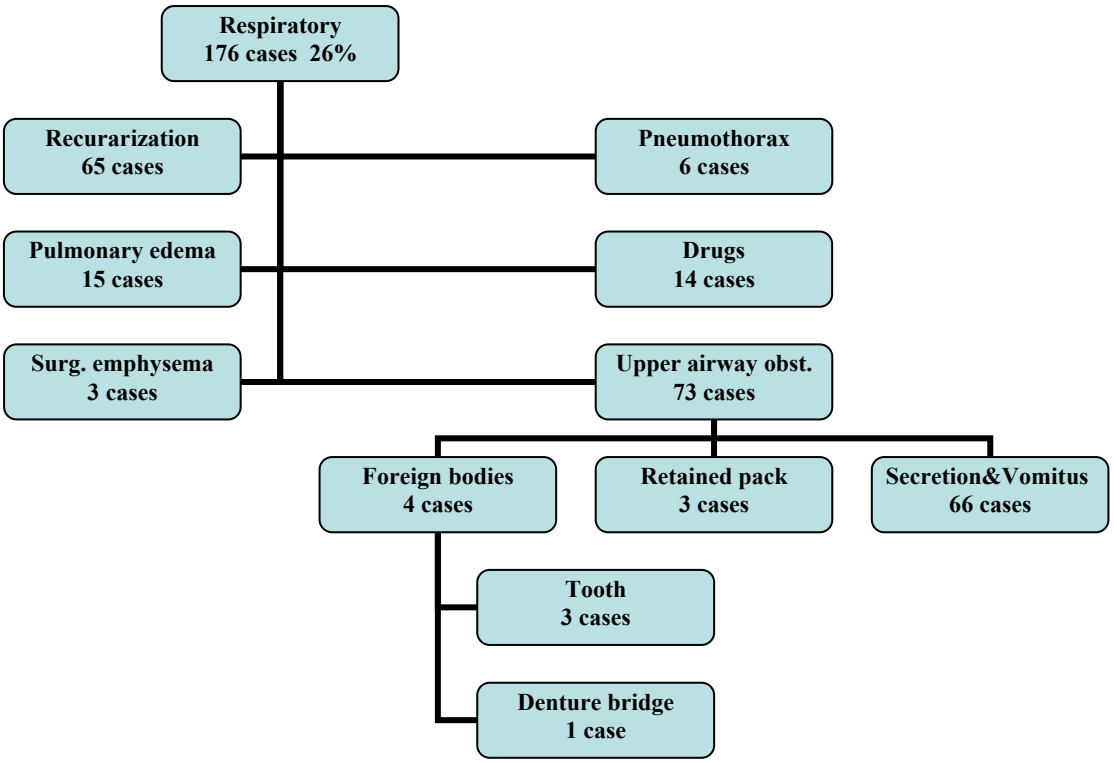


Fig.2: Respiratory incidents and their types.



One hundred and twenty one patients had cardiovascular event, commonly was hypotension and collapse as demonstrated in table I.

Table II showed that irritability is also a common incident (22%) and mainly was due to pain.

Table I: Irritability.

Pain:	
Wound	60
Chest	38
Shoulder	11
Full bladder	35
Forgotten tourniquet	2
Hypoxia	
Total	146, 22%

Table II: Thermal incidents.

Hypothermia & Shivering	125
Hyperthermia	2
Total	127, 19%

Hypothermia is another common incident (125 cases) as revealed in table III. Table IV display other events such as nausea and vomiting, low urine output and unfortunately fall from couch.

Most of these events were managed immediately with success in the recovery room apart from 5 deaths, one amputation and 61 admissions to the ICU.

Table III: Cardiovascular incidents.

Hypotension	116
Cardiac arrest	3
Hypertension	2
Total	121, 18%

Table IV: Other events:

Nausea & Vomiting	60, 9%
Low urine output	34, 5%
Fall from couch	5, 1%

Table V: Outcome.

Death	5
ICU admission	61

Discussion

Completing the operative list is the main burden of the anesthesiologists who are so busy in the theatre to follow up meticulously their discharged patient, so these patients are left in the recovery room under care of the assistants.

Accidents still occur although assistants are well taught about the discharge criteria (table VI) and the recovery guidelines (table VII)[5].

Our results showed a higher incidence of recover room events than others[2,3].

Many factors contribute for recovery incidents; the shortage in number of anaesthesiologists and assistants is the major one; the lack of monitoring devices such as pulse oximeter in the period following the war is also another factor.

The most common incident is the respiratory one (26.3%), the deficiency of good number of suction machines, proper drugs and good observation contributed for this respiratory event.

The inappropriate thermal regulation of the operating theatres and recovery room is the main reason for high incidence of thermal events (19%).

The shortage of proper intravenous fluid and blood pressure monitoring devices lead to the high incidence of hypotension in the recovery room.

Proper analgesic agents are not always present in the recovery room, this had caused the patients to be in pain that sometimes had pilot to many of our incidents.

We recommend that anaesthesiologists and assistants should be trained on recovery room incidents and how to deal with each. Medical authorities should provide the perfect drugs, equipments and space and environment for the recovery room. Anaesthesia personnel should follow the discharge criteria and the recovery room guidelines to minimize the incidents.

Table VI: Discharge criteria

- Patient conscious and maintaining a clear airway
- Return of protective airway reflexes
- Satisfactory breathing and oxygenation (O_2 Saturation > 93% on air)
- Stable pulse and blood pressure
- Good peripheral perfusion
- Acceptable temperature
- Operative site review
- Good urine output
- Adequate analgesia

Table VII: Association of Anaesthesiologists of Great Britain & Ireland recovery room guidelines.

Position of recovery	Situated as close as possible to the operating theatre to minimize the risk of transporting unstable patients
Size and temperature	*An average of 1.5 recovery bays per operating theatre(9.3m^2 per bay) *Room temperature 21-22^oC, relative humidity 38-45% and fifteen changes of air per minute *Gas scavenging system and six 13 ampere electricity outlets per bay *Well lit with lighting approximately to the daylight spectrum
Equipment in each bay	*Oxygen outlets, face masks and breathing systems *Pulse oximetry *Availability of BP monitoring and ECG *Suction unit *Fully equipped anaesthetic machine with ventilator for adults and paediatrics *Drugs and intravenous fluids

References

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