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Sharps Injuries in the Operating Theatre

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Abstract:- Sharps injuries are second mostly to lifting and handling injuries in the range of workplace risks encountered by healthcare staff on a regular basis. A significant number of UK healthcare staff has contracted both Hepatitis C and HIV. The real and possible effect of serious injury on individuals and companies are far greater than purely statistical vulnerability Sero-conversion of the blood-borne virus. Efforts in the past In order to avoid sharp accidents, the emphasis was on improving behaviors; Prevention is the focus of the current laws and there are now clear standards to be followed. Sharps accidents are commonly accepted as having been recorded. They are too frequently viewed as a repulsive occurrence. Occupational vulnerability when working in healthcare. However the violence of such injury may not be a better contrast to the clinical intentions of healthcare workers. They are too commonly seen as a repulsive occurrence that presents an occupational risk when employed in healthcare. The brutality of such injury, however, may not be a greater contrast to Therapeutic intentions of healthcare practitioners.

I. INTRODUCTION

Sharps injuries can be traumatic, shocking, disabling, and stressful to the person. The initial pain can be accompanied by Weeks of worry and confusion as the implications of such a seemingly harmless occurrence unfold. Sharps accidents can terminate their lives and can rob providers of limited and important human capital. For the company, acute injury is potentially expensive; the detection, monitoring and care of injury requires time and resources, not least due to the partial lack of the job contribution of a specialist who is often scarce and qualified. .As a department, the Operating Theaters are the scene of more serious accidents than any other hospital venue. As a proportion of the amount used the incidence of bruising of suture needles and scalpels is significantly greater than the rest of hollow bore needles. While any sharp injury prevention technique begins by preventing the use of sharps, the design of the job in theaters also renders this impossible.A recent state legislation has added a sense of urgency to the existing need for improvements in conventional surgery. The operation room and the delivery room are uniquely dangerous workshops. Needle sticks, scalpel wounds, and other injuries are normal and recorded. The 2000 Needle Stick Safety and Prevention Act and the updated Occupational Safety and Health Administration (OSHA) Enforcement Directive state the need for the identification, procurement and application of engineering controls and work processes that efficiently avoid or mitigate accidents. Healthcare frontline staff must be involved in all stages of transition.

1. Recognize the occurrence of acute accidents.
2. Identifying approaches and procedures for decreasing OR sharp fractures.
3. To analyze the various threats and how to mitigate these hazards.

- *Causes of Sharp Injuries*

A sharp injury is characterized as a penetrating stab wound by a sharp instrument (e.g. a scalpel, needle, or other sharp object) that may result in exposure to blood or other body fluids. Traditionally, the OR was second only to the patient rooms in the frequency of recorded acute injuries. The intrinsic existence of blood intensive OR, combined with the use of sharp instruments and other equipment, often with minimal visual cues, and the coordination needed by the surgical team put peri-operative staff at higher risk of acute related injury and exposure to blood than other HCWs.For instance, in the OR, workers may not seem to have the opportunity to take a rest and may proceed before the operation is completed; these strenuous pressures sometimes result in emotional of dissatisfaction, exhaustion, and often resentment, both of which can raise the risk of serious injury and eventual infection. The use of inappropriate practices (e.g. hand-to-hand transfer of sharps between staff members, location of sharps in the disposal tub, or failing to use safer sharps) is often associated with sharp injuries.

- *Incidence of Sharps Injury During Surgical Procedures*

According to the CDC, 27 per cent of all percutaneous injuries can be caused at the Operating Theatre. Of these, 43 per cent were attributed to suture needles (CDC) with scalpel injuries causing the bulk of the remaining (18 per cent, respectively). 20% of all patient injuries are due to suture needles; 8% of all hospital injuries are due to suture needles. They are caused by scalpels. 20% of all patient accidents are due to suture needles; 8% of all hospital injuries are due to suture needles.

It has already been reported that wounds or needle stick injuries result in as much as 15% of procedures. Higher risks are associated with longer, more invasive and greater blood disorders procedures. Half of them are self-inflicted, but as many as one quarter are induced by other team members. Scalpel accidents pose a multi-faceted risk when they inflict mechanical injuries.

Injury to exposing both the injured person and the patient to the possibility of contracting a blood-borne infection. The depth of the injury and the instrument causing the injury has been associated with a greater risk of infection in the artery or vein of the patient.

➢ *Reducing chances of injuries:*

- No-Hands Passing

A new review of the feasibility of the no-hands passing procedure found a 59 per cent decrease in injuries, contamination and glove tears in surgeries with a blood loss of more than 100 cc. Specific tools for passing hands, such as trays, basins, all or part of an instrument stand, or a specified field area, may be used. Some of them perform better than others and some of them can potentially be risky. The ubiquitous kidney basin is an example of a bad choice: objects are hard to pick up, fingertips tend to wind up inside—in near proximity to the sharp—and these basins tend to tip over. Ideally, the unit preferred for no-hands going through should be of adequate scale to better accommodate the sharp-edged, not easily tipped over and easily movable.

- The No-Touch Technique

Scalpel and suture injury locations are most often the thumb and index finger of the non-dominant hand, since the non-dominant hand is mostly used to reposition or reach the needle, to maintain the tissue that is sliced or sutured, to secure the neighboring viscera during cutting or suturing, during mounting or repositioning the needle in the holder of the needle, or to place the scalpel blade on the hand. Injury may occur during suture when fingers are used as a backstop or guide, when tissue is held by hand during suture, when the needle is connected to the surgeon or assistant's fingers, when adjacent structures are covered by the surgeon or assistant's hand, when manual tissue retraction or wound exposure is used when the needle is attached, and when the needle is left on the ground, or when the needle is held in. The use of no-touch technique, retractors instead of fingertips, blunt sutures and no-hands passing sharps will avoid most OR accidents.

- Other blunt alternatives include:

1- Scalpel blade injury can also be avoided by substitute cutting methods, when scientifically necessary, such as blunt-tip scissors, blunt electro-cautery tips and lasers. Two other choices include the use of round-tip scalpel blades and if technically possible, endoscopic or laser surgery instead of open surgery.
2- Non-penetrating towel clips
3- Blunted retractors in place of sharp versions
4- Synthetic sutures in place of wire sutures
5- Hemostatic clips vs. sutures where appropriate

- Eye and Face Protection

Usable plastic face shields carried over the mask offer a great protection for the eyes, nose and mouth. Face shields tend to remove the issue of holes along the edges of most other forms of eye wear, and the foam brow ring creates a seal over the forehead to avoid blood from streaming through the eyes from above. If anyone has failed to wear eye shielding, the circulator will quickly add a face shield to a person who has completed surgery. It should be the responsibility of the person in charge of the other surgical team members to search for omissions, helped by circulation. Using an anti-fog mask to avoid fogging of the face shields. Goggles or eyeglasses with top and side protectors are widely available, also with a prescription lens if desired. Splashes over the roof can occur, so always choose the equipment needed for the expected danger of exposure. Face masks with an incorporated transparent plastic eye shield are another relatively powerful choice.

- Surgical Glove Selection

Sterile team members should have double gloves for all surgical operations, including laparoscopic and robotic procedures. Double gloves should require the use of colored inner gloves, referred to as a surgical gloves perforation indicator device, to improve the sensitivity of gloves perforation identification.Double gloving greatly eliminates the risk of transmission of blood-borne infections to the patient and to the sterile staff. Glove perforation rates are as high as 61 per cent for surgeons and 40 per cent for surgeons in the first scrub position. Initial intraoperative glove perforation happens on average for 40 minutes and is not observed by a surgeon in as much as 83 per cent of cases.

- Safe Sharps: Disposal in Surgery

In order to minimize the risk of injuries to HCP and patients, a non-sterile plastic sharp container must be used for disposing of all sharps. Non-sterile plastic sharp containers are critical protective engineering controls as part of the acute accident reduction program.

The decision on the type/style of non-sterile disposable sharps container to be used should be based on four criteria: functionality, accessibility, visibility, and accommodation.

The selection should be based upon the followingfactors:

• Assessment of size and types of sharps,
• Assessment of the volume of sharps to be disposed,
• Assessment of frequency of replacement of containers,
• Compliance with local, state and Federal regulations,
• Environmental and disposal laws,
• Cost considerations
•Continued evaluation of efficacy of current container in use and new products.

- Effective Communication

Connection between the medical members of the team should be random and constant. A big shift in the aviation policy was the idea that the director of the airplane's decision or viewpoint may be disputed." Any member of the flight crew who perceives an immediate threat is expected to bring it to the notice of the captain of the airplane. If the surgeon is a "captain of the vessel," the same could happen when another member of the OR staff senses a sharp injury or exposure.

II. CONCLUSION

Causative factors for acute injuries and exposure to blood have been identified. The preparation and introduction of safer instruments and work procedures has been required by the Needle Stick Protection and Prevention. While any divergence from conventional surgery can be taken, members of the surgical and obstetric staff may minimize workplace risk quickly and dramatically.

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