18174-Mubashira-Deltoid Abscess - Author RSD

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DELTOID INJECTION ABSCESS IN PATIENTS PRESENTED TO A TERTIARY CARE HOSPITAL: IGNORANCE IS NOT ALWAYS A BLESSING

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ABSTRACT

Objectives: To find out the aetiology of deltoid injection abscess emphasizing more on the reasons in female patients and disseminate awareness among the community.

Materials and Methods: This descriptive cross-sectional study was conducted in the female Outpatient Department of surgery at Khyber Teaching Hospital, Peshawar, Pakistan from April 2017 to December 2017. All female patients with age more than 14 years who presented with deltoid injection abscesses on either arm were included and patients with diabetes, bleeding disorders, major debilitating disorders or immunocompromised conditions were excluded after taking informed consent in the study. All patients were interviewed regarding the Intramuscular injection technique and data was collected on a set proforma and analyzed on SPSS 20.

Results: A total of 50 female patients with deltoid injection abscess were included in the study. The injection administered by qualified personnel was 14 (28%) and non-qualified personnel were 36 (72%). It was injected over the sleeve in 41 (82%) patients while in only 9 (18%) patients the arm was exposed properly. The reasons for insignificant exposure came out to be social reasons in 9 (18%), time deficiency in 9 (18%), improper trained personnel in 19 (38%), tight sleeves in 4 (8%) patients. In 9 (18%) patients aseptic measures were used while in 41 (82%) patients no aseptic measures were taken. Majority of patients were in the age group of 26-45 with mean age 35.5 years and S.D ± 12.93.

All these patients had received injections from some local practitioners. The aetiology may be vast and surprising but our patients mostly received IMI over the sleeves due to simple avoidable reasons. It is to raise awareness on the root level before emphasizing on setting protocols.

Keywords: Injection Abscess, Deltoid Region, Local Practitioner.

INTRODUCTION

According to the WHO, intramuscular injection is a parenteral administration of drugs through a puncture in the skin with a needle in a syringe into a large muscle of the body for curative or prophylactic purposes [1]. The administration of IMI is an important part of medical treatment and a more practical intervention for local techniques and practices in our configurations. The deltoid region is the popular area used for intramuscular injection. Mostly injections are given for therapeutic measures, since only 5% of all injections are for vaccination. Many of the injections for therapeutic purposes have been considered unnecessary in developing countries[2].

A skilled injection technique results in less pain and prevents many avoidable complications [3]. The complications include fibrosis and muscle contracture, nerve injury, formation of abscesses at the injection site and gangrene[4].

The first complication of the hypodermic injection of drugs was reported by Dr. Charles Hunter in 1865 [5]. At the time of his report, there was no sterilization of medications, syringes or needles. Unfortunately, even today the incidence of developing an IMI complication ranges from 0.4 to 19.3 % of patients [5].

Infection can be a potential complication of any injection. The causes narrated can be an incorrect site, repeated injections at one site, causing skin and surrounding tissues being damaged and developing local ischemia and necrosis, therefore, becoming susceptible to infections [6]. Once an abscess is detected, an incision and drainage should be made, and it may be necessary to repeat [7].

In developing countries, abscesses are the result of injection involving unsterile measures including the use of contaminated needles and dirty clothes [8]. Therefore, there is a need for a system of reliable protocols for the administration of IMI both safely and effectively [9].

The purpose of this study is to highlight the aetiology of deltoid injection abscesses in female patients due to technical faults. The cause is not only lack of training but social and time restraints too. It is to make our healthcare providers realize that the skilled administration of a drug by intramuscular injection needs awareness not only among the practitioners but also among the local population in terms of proper exposure of the injection site to avoid potential complications in females in a male dominating society. It is instilling awareness in the best interest of society to eliminate avoidable complications and indirectly the unnecessary burden on medical institutions.

MATERIAL AND METHODS

The descriptive cross-sectional study was conducted in the female Outpatient Department of surgery at Khyber Teaching Hospital, Peshawar, Pakistan for a period of eight months i.e. April 2017 to December 2017. All female patients with age more than 14 yeas rwho presented with deltoid injection abscesses on either arm were included and patients with diabetes, bleeding disorders, major debilitating disorders or immunocompromised conditions were excluded after taking informed consent in the study.

All patients were immediately worked up as a day case with detailed history and clinical examination. All patients were interviewed regarding the Intramuscular injection technique and the parameters studied were broad qualification of the personnel injecting the intramuscular injection, the exposure of respective area, the reason for insignificant exposure and the aseptic measures taken or not. data was collected on a set proforma and analyzed on SPSS 20. Frequency and percentages were calculated for categorical data like etiology. Mean ± S.D was for numerical variables like age. All results were presented on tables.

RESULTS

A total of 50 female patients with deltoid injection abscess were included in the study in which the intramuscular injection was administered by qualified personnel was 14 (28%) and non-qualified personnel were 36 (72%). It was injected over the sleeve in 41 (82%) patients while in only 9 (18%) patients the arm was exposed properly. The reasons for insignificant exposure were shown in table no.1. In 9 (18%) patients aseptic measures were used while in 41 (82%) patients no aseptic measures were taken. Majority of patients were in the age group of 26-45 with mean age 35.5 and S.D ±12.93.

DISCUSSION

Injection abscess is an iatrogenic infection that can occur as an isolated case or as a cluster outbreak. Dr. Hunter, whose patients developed the first reported complication of IMI, said that "If the site of the injection was continuously varied and the puncture was performed carefully and quickly, there was no fear of abscess or diffuse inflammation". The procedure can lead to numerous and surprising complications. Most of the problems that arise are related to the local trauma caused by the injection itself or by the irritant properties of the medication used. Others conclude that inadequate training in proper injection technique is responsible. However, the true etiology remains an unresolved dilemma [5].

The cause may be contaminated injectables or inadequate sterilization protocols, pathogens such as pseudomonas, klebsiella, E. coli and S. aureus are the usual causative agents [10].

The most common complications noted after IMI are abscesses, pain, bleeding from the injection site, hematoma, recurrent abscess, tissue necrosis, scar formation and fibrous myopathy [11]. In addition, these unsafe and unhygienic techniques can lead to a number of infections, particularly hepatitis B and C and HIV [12].

Abscesses due to injections are the nodules of liquefied fat and muscle resulting due to necrosis of the affected tissues. Muscle necrosis can occur after any IMI no matter what medication is used. The amount, speed and toxicity of the injected drug will influence the size of the lesion [13].

The selection of the site and the appropriate place for IMI is immensely important. According to one study, 64.2% of the practitioners, were not sure about the correct site of injection in the deltoid muscle [4]. In another study, it is recommended to avoid the deltoid region whenever possible since it is a small area available for safe IMI. The needle should enter at 90 degrees to the skin punctured site and repeated IMI should be avoided [14].

In our locality, the paramedics are used to mix different intramuscular medications in the same syringe to form a mixture of medications that can lead to the interaction of medications and produce adverse effects at the local site. The mixture is usually a collection of analgesics, antibiotics or steroids [8].

In our study, the etiology of the deltoid injection abscess in female patients in our settings is eagerly awaited. We have added that ignorance is not always a blessing, since not only practitioners, but also our patients and their attendants mostly males, are of the opinion that they can escape complications every time. The IMI was administered by 72% of non-qualified personnel and was injected over the sleeve in a horrendous 82% of the patients.

According to one study, it was observed that 5.5% of the test subjects admitted to having injected through the clothes, whereas 11.9% had the habit of cleaning the needle with a cotton swab before the injection. Injecting through the clothing can lead to the introduction of dust, cloth fiber and other infectious organisms at the site of injection [4].

It is in our study that we have highlighted the reason for inadequate exposure in female patients in our setting, which can be heart wrecking to register. Although the lack of time, improperly trained staff, tight sleeves were some of the reasons for inappropriate exposure. In

18% of patients there were social reasons in which male attendants did not allow their patients to expose their arms to male practitioners and, therefore, aseptic measures were not taken in 82% of patients.

There may be other reasons for abscesses by deltoid injection as shown in the literature, but here a possible avoidable cause for infections through IMI is emphasized to eliminate the frequency of abscesses by deltoid injections due to inappropriate exposure in a male dominating society. They make their female patients land under the scalpels of male surgeons.

It is to minimize the unnecessary burden on medical funds through awareness raising. It has been cited in the literature that unsafe IMI techniques have led to millions of dollars in cost each year [15].

As cited in the literature, infections can be minimized by thoroughly cleansing the skin after adequate exposure, use of disposable needles, single dose medications, adequate needle size and length, multiple sites if repeated, and retracting the plunger before injecting. But our study highlights the least bothered reasons to raise awareness in the best interest of our community.

The limitations of our study is that we conducted this study on female patients only. Although, it can be considered as a plus point in our study as the present study holds the gender variable constant but the main reason for not including male patients along with female patients is that the author is examining only female patients in female Outpatient Department of surgery. So the present study cannot be generalized to male patients too. This area needs further research.

CONCLUSION

The purpose of IMI can be fulfilled by following the reliable protocols to make the complex psychomotor task more effective and to minimize the complications. In addition to the proper training of health care provider's awareness among the practitioners and local population regarding appropriate exposure before IMI is a simple practice that can avoid unnecessary complications and indirectly minimize cost on annual basis.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Mubashira Ahmad: Main idea and data collection.

Munir Ahmad: Critical review & make changes and help in introduction.

Sikandar Hayat: Data analysis and help in discussion writing.

Fakhar-e- Alam: References and acquisition of data.

Ijaz Ahmad: Supervision, final revision, changes and approval of the version to be published

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Figure: IMI Deltoid abscesses of patients under study

Table 1: Reasons of improper exposure of arm for Intramuscular injection

Reasons	Frequency	Percent
Social Reasons	9	18.0
Time Deficiency	9	18.0
Improper trained personnel	**19**	**38.0**
Tight sleeves	4	8.0
Properly exposed arm	9	18.0
Total	50	100.0

Table 2 : Frequency and percentages of ages in different groups of ages

Age groups(yrs)	Frequency	Percent
16 TO 25	13	26.0
26 TO 45	28	56.0
46 TO 70	9	18.0
Total	50	100.0

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