

The “Ezike File” In Enugu

E Humphrey, A Obinna, A Adaobi

Citation

E Humphrey, A Obinna, A Adaobi. *The “Ezike File” In Enugu*. The Internet Journal of Third World Medicine. 2010 Volume 9 Number 2.

Abstract

Before now, injection ampoules typically were supplied with files for ease of breaking the glass before drawing up the drug.¹ The importance of this include less risk of sharp injury to the physician and reduced risk of injecting glass particles to patients.^{2,3,4} In recent times these files are no longer available. Place this on a background of the increased risk of infection with HIV/AIDS and hepatitis C virus, the need for an alternative method of breaking the ampoule was sought. Methods: We designed a file made from simple and freely available material to cut the ampoules. The file is made of the metal material used to cut various materials ranging from wood, metals to plastics. There are two types of such file: smooth and rough. The smooth (fine) was chosen. They were cut to short bits of 6 cm long and kept sterile by washing in bleach and rinsing with water and spirit respectively. The files were given to residents and were advised to use them in filing ampoules. Ease of breaking the ampoules was then reported as excellent, good, or bad. The data obtained was entered into Microsoft excel and analyzed. Results: This was prospectively used in 3455 instances of ampoule filings. 2591 (75%) of respondents reported excellent, while 864 (25%) reported good. There was no report of bad Conclusion: In the absence of pre-supplied injection files, the Ezike file should be encouraged to avoid sharp injuries and foreign body injection

INTRODUCTION

BACKGROUND

In the medical and allied health professions, single doses of sterile medication came in glass ampoules and packaged with disposable abrasive files intended for opening these ampoules.¹ Often, the file is small, difficult to handle, dull, and easily misplaced. When a small file is misplaced, valuable time may be lost to the detriment of those for whom the medication was intended. A dull file or one which is difficult to handle will produce an inferior score on the neck of the ampoule. If the score is not satisfactory, small glass fragments may be ejected from around the neck during opening. Additionally, inadequate scoring may result in unusually sharp edges around the open neck of the ampoule. As an improvement, etched break line in the neck of the ampoule was made at the time of manufacture. This eliminated the need for the file. But breaking the ampoule still had its problems due to variations in the etch, variations of the length of the appendage to be broken off, and the strength of the person breaking the ampoule. As a result pliers and other tools were used to help in the breaking. Some users, to avoid cutting of the hands and fingers in opening ampoules will wrap the ampoule in a cloth, paper towel, or the like. While this may prevent injury, wrapping and unwrapping the ampoule is time consuming and may

lead to dropped or spilled ampoules.

In anaesthesia practice, unavailability of ampoule file detracts from user safety, exposes the patient to dangers of particulate injection and critical incidents may result. The present invention relates to an improvised method for breaking an ampoule appendage from the fluid container portion.

METHODS

We designed a file made from simple and freely available material to cut the ampoules. The file was made of the metal material used to cut various materials ranging from wood, metals to plastics.(fig1)

Figure 1

Figure 1



There are two types of such file: smooth and rough. The smooth (fine) was chosen. They were cut to short bits of 6 cm long and kept sterile by washing in bleach and rinsing with water and spirit respectively. The files were given to residents and were advised to use them in filing ampoules. Ease of breaking the ampoules was then reported as excellent, good, or bad. The data obtained was entered into, Microsoft excel 2007 and analyzed.

RESULTS

4000 questionnaires were sent out and 3455 was retrieved for analyses. Of the retrieved ones, 2591 (75%) of respondents reported excellent, while 864 (25%) reported good.(Fig.2,3) There was no report of bad. 1450 respondents were house officers, 570 were nurses, 1100 were resident doctors and 335 were consultants. Of these figures, anaesthetists were 33. A sub-survey showed that nurses (80%) were more willing to use injection files when available than doctors (47%) just as anaesthetists will use the file more than other group of doctors. The consultants (50%) used the files less than resident doctors.(62%)

Figure 2

Figure 2

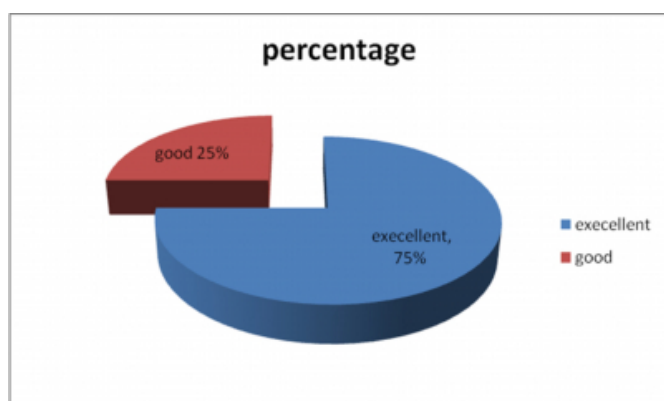
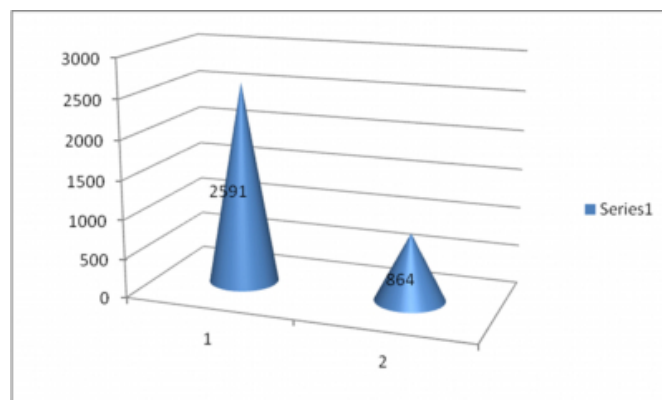


Figure 3

Figure 3



DISCUSSION

The importance of an injection ampoule file in anaesthesia practice is often overlooked until a preventable accident occurs, especially in the face of contamination by potentially deadly organisms.⁵ The dangers to the patient in our environment are not even discussed. However, these dangers are real and with us. The contamination of a single-dose glass ampoule by glass fragments has been well documented.^{2,4,5} Intravenous infusion of these particles has been associated with thrombophlebitis, thromboembolism, and formation of large mono- and multinucleated foreign body giant cells.⁶ To prevent these fearful consequences, and perhaps due to the litigation tendencies of their society, syringes with filter are used in some western countries.⁷

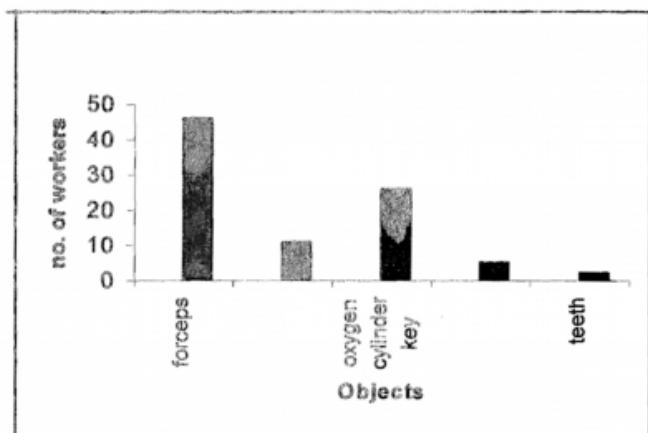
In Nigeria, little attention has been paid to standardizing ampoule breakers. Healthcare workers are inundated with articles on preventing needle stick injuries without noting that the injection ampoule is a very common sharp object which we come in contact with in our daily practice. Dr Eguma et al in Zaria, Nigeria noted that only 10.6% of theatre workers used injection files to open ampoules at a time when these files were available.⁸ In that study, it was scaring that 2% of respondents used their teeth to open the ampoules.(fig.4)

The Ezike file which we improvised is cheap, easy to use and sterilized.(Fig1) It is a familiar object in our environment and not likely to disappear soon as it finds use in so many areas of labour.

Figure 4

Figure 4

Method of Opening Ampoules by Respondents



Conclusion: In the absence of pre-supplied injection files,

the Ezike file should be encouraged to avoid sharp injuries and foreign body injection.

References

1. Ampoule cutter: Assessed from <http://www.patentstorm.us/patents/4637139/description.html>
2. Kempen PM, Sulkowski E, Sawyer RA. Glass ampoules and associated hazards. Crit Care Med. 1989;17(8):812-813
3. Turco S, Davis NM. Glass particles in intravenous injections. N Engl J Med. 1972;287:1204-1205
4. Carbone-Traber KB, Shanks CA. Glass particle contamination in single-dose ampoules. Anesth Analg. 1986;65:1361-1363.
5. Falchuk KH, Peterson L, McNeil BJ. Microparticulate-induced phlebitis: its prevention by in-line filtration. N Engl J Med. 1985;312:78-82
6. BREWER JH, DUNNING JH An in vitro and in vivo study of glass particles in ampoules J Am Pharm Assoc Am Pharm Assoc. 1947 Oct;36(10):289-93.
7. Waller DG, George CF. Ampoules, infusions and filters. Br Med J. 1986;292:714-715.
8. Eguma, SA, R. Mohammed RI. Observing Precautions against Cutaneous Injuries by Theatre Workers. Nig J Surg Res 2001; 3: 147 – 153

Author Information

Ezike A Humphrey

University of Nigeria Teaching Hospital

Ajuzieogu V. Obinna

University of Nigeria Teaching Hospital

Amucheazi O. Adaobi

University of Nigeria Teaching Hospital