



## A REVIEW OF UNHEALED WOUNDS EMANATING FROM FOREIGN BODIES



<sup>1</sup>EGEONU S.U, <sup>2</sup>ADEOTI, I.S, <sup>3</sup>ONYEKU, O. C AND <sup>4</sup>IGBODOR; M

<sup>1,2</sup>Department of Medical Laboratory Sciences Federal University Wukari

<sup>3</sup>Department of Medical Laboratory Science, Specialist Hospital Jalingo

<sup>4</sup>Department of Surgery, Federal Medical Center Jalingo

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### Abstract:

Unhealed wounds predispose to excessive antibiotic administration, recurrent infection, discomfort and wasteful spending. This study investigated the causes of unhealed wounds that were not primarily of microbial aetiology. Fifty swab samples were collected from different wounds sites for microscopy, culture and sensitivity. Proper attentions were paid in the process of sample collection to detect any suspected reason for the non-wound healing. Among the non-healing wounds without any primary aetiologic agents were caesarian Sections 10 (20 %), ordinary wounds 4 (8 %), appendectomy 2 (4 %) and ear swab 1 (2 %). The implicated agent for the non-healing of the wounds were remnants of sutures, objects and wrong application of antiseptics. We advocate that those responsible for removing stitches from patients do a thorough job by not leaving any remnant of sutures, patients should be informed about the right application of antiseptics and scanning done on deep wound sites to determine the presence of foreign objects. In this way, the number of non-healing wounds will drastically reduce.

### Keywords:

unhealed wounds, foreign bodies.

### Introduction

Foreign bodies are objects that come from outside into the body. They could be microbial agents of viral, fungal, bacterial or parasitic origin. They also include objects introduced into the body such as stitches, catheters, or grafted tissue in organ transplant. The foreignness of these bodies predisposes the bodies to rejection when found in human bodies. The immune system of the recipient objection slowly damages the body of the recipient. The outcome is delayed healing, excessive antibiotic administration, recurrent infection, discomfort and wasteful spending.

The article is not looking at foreign bodies of microbial origin rather it is concerned with sutures and some other objects that have hindered wounds from healing. There are various types of absorbable and non-absorbable sutures used in surgery. Sutures or stitches are sterile surgical threads that are used to repair cuts or lacerations. Sutures are also useful in closing surgical incisions. Non-absorbable sutures are ideal for skin wounds and need be removed within a week once wound healing has taken effect, enabling the healing process to continue without the suture and also avert permanent scar formation (Harvard Health 2021). Inability to remove these sutures as at when due or partial removal of the sutures pose serious problems to the wound healing process as in caesarean sections. Terri and Ferdnando, (2020) have stated that removing stitches is dreaded by many practitioners though the reasons for such action were not mentioned. Another area of concern is prolonged usage of urinary catheter which predisposes to

biofilm formation thereby making healing a big problem. A biofilm is an extracellular matrix composed of adherent microorganisms, their secreted extracellular products and host components (Gristina 1987, Denstedt et al., 1998) and its presence makes both treatment and healing a herculean task (Lyte et al., 2003). The role of biofilms in the formation of chronic ulceration has been on records. Studies have shown that *E. coli*, *Enterococcus spp*, *Pseudomonas spp*, *Enterobacter spp*, *S. aureus*, coagulase negative *Staphylococci* and yeasts are common causes of urinary tract infection and catheter blockage (Tenke, et al., 2012, Brill, et al, 2018). Undiluted application of antiseptics could also lead to non-healing of wounds.

### Methodology

For all the patients sent for microscopy, culture and sensitivity (MCS), keen observations were made on the sutured wound sites that did not have complete healing. Majority of the patients have had antibiotic administrations based on susceptible bacteria, yet wound healing was not completely effected. A thorough search was therefore made for remnants of sutures left at wound sites. There were also interaction with patients whose wounds had no sutures yet healing was a problem. Relevant information were gathered from these patients regarding their use of antiseptics in wound dressing.

### Results

A total of fifty wound samples were analysed among which were thirty Caesarian sections (CS), ten ordinary wounds, five appendectomy and five ear swabs.

**Table I:** showing wound sites and number of unhealed wounds

S/N	TYPE OF WOUND SITE	NO (%)	NO OF UNHEALED WOUND (%)
1	Caesarian sections	30 (60)	10 (20)
2	Ordinary wounds	10 (20)	4 (8)
3	Appendectomy	5 (10)	2 (4)
4	Ear swab	5 (10)	1 (2)

**Table II** showing number of unhealed wounds and the implicated agents for the unhealing of the wounds

S/N	TYPE OF WOUND SITE	NO (%) OF UNHEALED WOUND	IMPLICATED AGENTS
1	Caesarian sections	10 (20)	Remnants of sutures
2	Ordinary wounds	4 (8)	Wrong application of antiseptics
3	Appendectomy	2 (4)	Remnants of sutures and wrong application of antiseptics
4	Ear swab	1 (2)	Bicycle bearing in the ear from childhood

**Discussion**

Medical laboratory scientists do not majorly come in contact with patients but rather receive their samples for various investigations as requested by the clinicians. However, certain conditions may warrant a patient to be sent to the medical laboratory for sample collection. It was in the course of the later that we came across some cases of un-healed wounds among some patients. Ten (20 %) of cases of unhealed wounds from caesarean sections (CS) were encountered for which wound swab microscopy, culture and sensitivity testing were requested for by the consulting physicians. In the process of sample collection from the CS sites, remnants of sutures were discovered and these were preventing the wounds from healing. The body will continue to recognize these suture remnants as foreign and will therefore attack them, thereby making the wound not to heal. There was also a case of recurrent infections. For instance, a young lady was always coming for ear swab microscopy, culture and sensitivity testing and each time, *P. aeruginosa* was isolated and antibiotic administration instituted. The lady got freed from the infection but came down again with it after a few weeks. Every moment on her arrival for further investigation, repeated cultures yielded the same organism. It was through scanning that a foreign object, bicycle bearing was spotted in her ear. It finally took surgical intervention to remove the object and the ear infection ceased.

Another point of interest is antiseptic use. It is not enough to advice a patient to use any antiseptic eg, savlon for cleaning his/her wounds. The Nitti- gritty of wound dressing must be spelt out to the patient without any assumption. Yes, we also came across some unhealed wounds 4 (8 %) due to wrong antiseptic application. For instance, a young lady had appendectomy and for weeks, the wound could not heal. On close examination, we noticed a kind of burns around the surgical site that arose our curiosity. Then, inquiry was made from the mother as to how she was doing the cleaning of the site. It was at this point that we realized that she was applying the antiseptic directly on the site undiluted. After receiving instruction to dilute the savlon before use, the wound site healed within some few days. The corrosive nature of undiluted

antiseptic will not allow a wound to heal. Therefore, some unhealed wounds may not be as a result of microbial infection but wrong application of antiseptics.

We have x-rayed some of the reasons that bring about unhealed wounds. Proper actions that will effect normal wound healing processes are advocated. Careful observations, correct judgments and identifying and removing the cause of unhealed wounds will bring solutions to the problems. Possible effective hygiene strategies for wound dressing rather than antibiotic administrations are required to avert predisposition to antibiotic resistance (Harding et al; 2002). Changing of catheter before collection of urine for m/c/s eliminates biofilms that cause persistent infections that are resistant to antimicrobial therapy. Also 0.02% polyhexanide irrigation solution on urethral catheter (Brill, et a.,, 2018) and antimicrobial hypochlorous wound irrigation solution in a complex in-vitro human plasma biofilm model (hp BIOM) (Julian-Dario et al; 2020) have demonstrated reduction in biofilm formation. The results give better hope than antibiotic administration. Wound dressing choice is also important not only for the speed of healing but also healing without scar. There are several choices of wound dressing but there is no single type in all situations. However dry wounds have slower healing effects than moist wounds as demonstrated in both animal models and humans (Eaglstein et al; 1985, Svensjo et al; 2000). Moist wounds have large contents of platelets growth factors and metalloproteases that greatly enhance wound healing (Armstrong and Jude 2002, Chen et al; 1992).

**Conclusion**

Those responsible for removing *stitches* from patients should do a thorough job by carefully observing and removing all the stitches. Failure to do so will cause non-healing of wounds, trauma, fears, wasteful spending and the likes to the patients. A delayed healing should immediately send signal to the consulting physician to rethink of what could be responsible before considering laboratory investigation for aetiologic agents and consequent antibiotic administration. A situation that demands scanning may never be sorted out until scanning

is done. Delay is dangerous. The earlier the right steps are taken, the better for both the clinician and patient. In this way, cases of delayed or non-healing wounds will be minimized.

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