

WOUND INFECTION — ITS INCIDENCE IN A SURGICAL WARD IN THE SINGAPORE GENERAL HOSPITAL

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In spite of the many recent advances in surgery and the advent of antibiotics, infection of operative wounds remains a major problem in most surgical centres. The incidence of wound sepsis in a surgical ward varies from one centre to another, but in general, it is sufficiently high to give rise to concern. In a report of the Public Health Laboratory Service on the incidence of surgical wound infection in England and Wales, 10% — 37% of wounds are reported to be infected. The incidence of sepsis is not known in this hospital, and the purpose of this paper is to study this problem in the wards of the professorial surgical unit of the Singapore General Hospital. This article is not concerned with all the factors causing wound infection but merely to determine its incidence in our surgical wards.

This survey of wound infection in the professorial surgical ward extended over a period of six months from January to July, 1962. Certain types of cases were not included in the study. The inclusion of these cases would have given a wrong impression of the actual incidence of wound infection. The cases excluded from our study were:—

1. All cases with frank suppuration, e.g., abscesses, carbuncles, empyemata, etc.
2. Operations on the anal canal and perianal region, e.g., piles, fistula-in-ano, etc.
3. All endoscopic examinations.

Gradations of wound sepsis.

In order to have a common standard for wound grading, wound healing was divided into three groups:—

Group 0— in this group the wound undergoes normal healing without any infection;

Group 1— there is redness of the wound. This is accepted as minimal wound infection;

Group 2— these cases show frank suppuration.

All operative wounds were inspected before patients' discharge from the hospital and graded accordingly. If any wound which was uninfected when the patients were discharged from hospital, was found to be infected subsequently at the follow-up, it was accordingly down-graded.

FIGURE 1

Types of Operation	No. of Cases
General Surgery	546
Gastro-intestinal	528
Genito-urinary	360
Thoracic	78
Neuro-surgery	162
Plastic	36
Emergency	552
Total ...	2,262

This figure does not include a large number of minor operations carried out in minor operating theatres.

There is a wide variety of operations performed in this surgical unit. Figure 1 shows the number and types of operations performed over a six months period. There were 2,262 operations carried out in the major theatres. This figure does not take into account an even larger number of operations carried out in the minor theatres. Out of the 2,262 cases, 550 were selected as suitable for this study of post-operative wound sepsis.

FIGURE 2

	No. of Cases	Percentage
Group 0 (No infection)	477	86.7%
Group 1 (Redness of Wound)	40	7.3%
Group 2 (Suppuration)	33	6 %

Of the 550 cases considered in our studies, the total sepsis rate is ... 13.3%

Minimal infection	7.3%
Suppuration	6 %

Figure 2 shows the incidence of wound sepsis in the professorial surgical unit during the first half of the year 1962. Of the 550 patients who had operations of one kind or another 73 of them (or 13.3%) had varying degrees of wound sepsis. On further analysis of these 73 cases, 40 (or 7.3%) had only redness of the wound without suppuration (Group 1) the remaining 33 cases (or 6%) had pus discharging from their wounds. The organisms responsible for the suppuration were in the majority of cases *E. coli* and *Staphylococcal aureus*.

DISCUSSION

Although surgical wound infection may sometimes cause serious complications, by and large, it is not fatal or serious. It does entail a good deal of post-operative morbidity. In some cases of persistent infection such as pyocyanus infection, prolonged hospitalisation may wear out the patience and resources of the patient. Furthermore the infected wound requires frequent dressings, and patients attending the clinics for frequent dressings is an economic wastage to the community at large.

Our incidence of wound sepsis (13.3%) agrees closely with most surgical centres in

other parts of the world. The seriousness of the high incidence of wound sepsis is widely recognised, and accounts for the great deal of work being done in this field, to find the causes and the solution to this problem of wound sepsis.

SUMMARY

In the first six months of 1962, 550 patients undergoing operations were investigated for post-operative wound sepsis. 40 patients (7.3%) had minimal infection causing redness of the wound. 33 patients (6%) had suppuration. The total incidence is 15.3%.

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REFERENCES

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