

Complications faced by Neurosurgeons in closure of abdomen for trans- abdominal neurosurgery done for Neurosurgical disorders

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ABSTRACT

Single layered closure were done in 300 cases including 2000 cases of polypropylene closure in 100 infected cases and 100 uninfected cases .Out of 100 cases of vicryl mass closure faired badly as regards to post operative infection and sinus formation in infected cases.

Key words: Abdominal closure, single layer, mass closure, layered closure, suture materials, infections. incisional hernia, burst abdomen, sinus

Abbreviations: - MC –Mass closure, LC - Layererd closure, IH- incisional hernia, cm -centimeter, Mts-minutes

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1. INTRODUCTION

The subject of abdominal incision, technique and suture material have long been of great interest to surgeons (Madsen, 1973). The Creiteria laid down for ideal suture materials has not been fully met by any suture material (Dudley, 1970). Different suture materials are having their own advantages and disadvantages (Leaper, et al. 1985). "Cut well sue well, heal well" is not always true. Healing of abdominal wound is persistent problem for surgeons since ancient times (Goligher et al. 1975). Different types of suture materials and incisions have added much confusion to this as well (Bucknall et al. 1981). Absence of any perfect way of prediction for wound healing adds owes to the operating team (Kirk, 1972; Gulati et al. 1987). This research conducted to critically evaluate the role of widely used suture material (vicryl and Prolene) in single layer closure (MC) of abdomen by clinical methods.

2. MATERIAL AND METHODS

This study was conducted by senior author at different hospitals in past in neurosurgical cases where *trans* abdominal approach were taken for various neurosurgical procedures. Only Midline or para median incision were used in all cases which were included in study. Closure performed by single (mass) layer using prolene or vicryl sutures. During Laparotomy, presence of infection and degree of contamination, problem encountered during closure and time consumed (per minutes for each cm of incision) was specifically noted. Post operatively, wounds were assessed on 3rd, 5th and 10th day (the day on which stitches were

removed if not indicated otherwise). On 3rd week also and upto 6th months reading were taken for presence of infection, discharge, wound dehiscence and scar tissue incisional hernia sinus formations were specifically observed.

3. OBSERVATIONS AND DISCUSSIONS

Total number of 300 cases studied, are shown in Table 1. It included 200 cases of prolene and 100 case4s of vicryl. 100 cases of prolene and 100 cases of prolene and 40 cases of vicryl were from sub group which were found infected at time of operation. The time consumed during prolene closure was one mts /cm of incision while it was 50 sec /cm for vicryl .The prolene sutures were difficult to handle and knot slippage occurred in 2 cases on contrary vicryl sutures was easy to handle, tie and burry without slippage of knot due to its braided character and easy folding and unfolding. In post operative complications were shown in table 1.

1. Infection rate (percentage) was 1.0 in both clean and infected subgroup of prolene while it was 4.0 and 8.0 in clean and infected cases respectively of prolene and vicryl suturing .Thus chances of wound getting infected was more with vicryl due to its less inertness and braided character which might harbor infection in its gutters.
2. Sinus formation was 1% associated with prolene closure while it was absent in clean cases of vicryl with 8% occurrence in infected vicryl closure.
3. Burst abdomen incidence was nil in all cases done either with prolene or vicryl.

Table 1
Post operative complications

S.No	Group/Sub group	Total Number	Infections %	Sinuses %	Burst abdomen%	Incisional hernia%
1	Prolene	200	2	2	0	1
1a	Uninfected	100	1	1	0	0
1b	infected	100	1	1	0	1
2	vicryl	100	12	8	0	4
2a	Uninfected	60	4	0	0	0
2b	infected	40	8	8	0	4

4. Incisional Hernia was not found in mass closure with prolene which were clean, while it was 1% in infected cases. Though mass closure was associated with 0% and 4% of incisional hernia in clean and infected cases respectively.

4. CONCLUSIONS

Thus by these studies, it was concluded that mass closure with prolene was simple method if done properly and takes 1mts/cm of incision and prevented any burst abdomen and

IH while there was risk of developing sinus when done in infected cases. Vicryl mass closure on other hand takes 10 sec onds less time for each cm of incision and were easy to handle and knot. They matched prolene mass closure in clean cases but had risk of developing infection, sinus formation and incisional hernia (specially late) if done in infected cases.

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