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X-RAY OPAQUE SPONGE

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This invention relates to surgical paraphernalia and more particularly to a surgical sponge or gauze pad or the like.

In the course of present day surgical practice and procedure it occurs not infrequently that surgical sponges and pads made of gauze and the like are inadvertently left within the surgical incision. The hazards of this catastrophe are particularly increased when the operative procedure involves the abdominal cavity. The danger of such an accident is ever present and frequently results in the prolongation of the patient's illness, the necessity of subsequent repeated reoperations in an effort to find and remove the inciting agent, and all to often even in the death of the patient.

Inasmuch as the surgeon's undivided attention at the operating table must be concentrated upon the delicate problems before him, it is frequently very difficult, if not impossible, to keep in mind the exact number and site of the many surgical sponges he must use. For this information he must rely upon the skill and accuracy of the "sponge count" as performed by the remaining members of the operating team. Should the "sponge count" reveal the misplacement of a sponge, the many valuable minutes lost in accounting for it before closing the incision may be just the difference between the life and death of the patient. Also, in emergency operations where the surgeon works under the tension and handicap of a limiting time factor, it may be necessary to cease all surgical procedure and to close the incision before an accurate sponge count may be made. The danger of a sponge or surgical gauze being left behind in such a case is always of paramount concern. Thus, although a careful count of all instruments and surgical sponges should be made before and after each operation, yet the human equation must always be considered and the possibility of error borne in mind.

Now, before the rather recent advent of the X-ray, the determination of the presence of such foreign bodies in the body cavity depended solely upon the diagnostic acumen of the surgeon. Since the advent of the X-ray, radio opaque substances have been made readily discernible by the use of this instrument, and thus the determination of their presence has been a relatively simple matter. However, in the event that the foreign body is not radio opaque, as is the case with surgical sponges and gauze pads, then the problem of the post-operative diagnosis of such a foreign body still remains. When a group of physical signs and symptoms point to the pres-

ence of a foreign body within the surgical incision, it is always a matter of the gravest concern and speculation on the part of the surgeon as to whether he might have inadvertently lost a surgical sponge and just where in the wound he might attempt to find it. By combining a radio opaque material with an ordinary surgical sponge or gauze pad, the presence of such an injurious foreign body might be definitely determined and accurately localized by the use of an X-ray machine. It is even a relatively simple and expedient matter to have an X-ray film taken before the incision is closed in those cases in which there may be some question of doubt. Thus, in such a manner, the presence and position of a surgical sponge within the operative incision may be clearly defined and its removal undertaken with the least possible risk to the patient.

In the preferred embodiment of my invention, a glass thread which has incorporated in its composition a material which is radio opaque, is interwoven into the mesh of a surgical sponge or gauze pad or the like. A single strand of this thread may be used and it may be woven into any part of the sponge. Also, a strand of this glass thread may be combined with a strand of the gauze thread and as such interwoven into the sponge. The glass thread is manufactured by a method commonly used in the glass industry and is preferably a potash-lead-silicate combination containing approximately 60% of lead oxide and 1% of antimony oxide. Although lead is preferred because of its low cost it will be understood that any of the heavy metals may be used in place of lead as for example gold, mercury, thallium, bismuth and others.

It is particularly desirable that a material used for such a purpose as herein described should be of itself unaffected by any reaction of the body tissues, and conversely, the body tissues must remain unaffected by the material itself. The glass thread previously described is admirably suited to just these conditions because it is a substantially inert material and consequently it is non-toxic. Added to the above mentioned qualities this thread is non-absorbable, non-irritating, readily sterilized, in no wise hazardous to use as are chemicals, metal wire or rings, and under no circumstances can its radio opaque shadow be confused with anything else in the body cavity.

It will be understood that the proportions and the ingredients as disclosed in the proffered embodiment are merely for the purpose of illustra-

tion and changes and modifications may be made without departing from the spirit of the invention or the scope of the appended claims.

I claim:

- 5 1. A surgical sponge comprising absorbent fabric and a radio opaque glass filament associated therewith, said filament being physiologically inert and unaffected by sterilizing procedure.
2. In combination with a surgical gauze
10 sponge, a radio opaque material interwoven

therewith, said material comprising glass thread having a radio opaque substance incorporated therein.

3. A surgical gauze sponge comprising an absorbent fabric and a glass thread interwoven 5 therewith, said glass thread having a radio opaque substance combined therewith, said substance comprising a chemical element of high atomic weight.

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