

Monofilaments mechanical in era suturing machines: Our experience

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The most used threads for tissue synthesis are composed of organic, synthetic, and natural fiber materials.

The most used organic material suture threads are catgut and chromic catgut, which are no longer used due to known complications.

The most widely used synthetic materials are for multifilament polyester and for monofilaments prolene and polypropylene.

The most used natural fibers are linen and silk.

The purpose of this paper is to report the results obtained by using various suture materials in the packing of the anastomoses, performed on patients operated on the digestive system at I Surgical Clinic during 2020-2022, and to report the results obtained in a previous experience of Trimpi and co.

From February 2020 to May 2022, 154 intestinal anastomoses, manual anastomoses were performed including 93 male and 51 female patients. Specifically, 29 right hemicolectomies, 23 anterior sigma resections, 7 sub-total colectomies, 21 left hemicolectomies were performed. In 48 cases the anastomosis was packed in monofilament, while in the other 106 cases traditional materials were used.

The case history used includes Ileocolic anastomoses 29; Colcolic anastomoses 21; Ileorectal anastomoses 7; Colorectal anastomoses 23.

Our results in the 48 anastomoses performed with monofilament the channelization occurred on the third-fourth day on average and the hospital stay was seven to eight days.

In the other 106 anastomoses performed with multifilament, bowel canalization was restored on the fifth to sixth day and patients were discharged in an average of nine to ten days.

The most frequently observed anastomosis-related complications were infection and dehiscence. Regarding dehiscence, six cases of infection and two cases of dehiscence were observed in the first group (monofilament) when suturing was done in monolayer and no cases in double-layer anastomosis.

In the second group of patients where the anastomosis was packed by multifilament, ten cases of infection and three dehiscence were observed among the anastomoses in monolayer and four cases of infection and one dehiscence in those with double layers. In Colon Rectal Anastomoses are useful the Traditional Sutures. The following parameters should be kept in mind to make the best choice:

- Material: natural, synthetic, metallic.
- Features: Sterility, strength, knot-tightness, manageability, capillarity, tolerability, absorbability; -Choice: synthetic monofilament (polyamide, polypropylene); metallic; natural multifilament (trail), synthetic (polyester, polyglycolic ac, polyglactin 910), metallic.
- Suture layers: monolayer, double layer.
- Surgeon's habits/experience.

Despite the mechanical suturing machines use, which give more security to tightness of the anastomosis and make the suture standard and uniform, the surgeon's knowledge of suture materials, both monofilament and multifilament, is mandatory, especially in order to avoid possible dehiscence and infection.

Biography

Paolo Izzo received his MD degree from Sapienza University of Rome in 2011. At the same University, he completed his PhD in the field of advanced technologies in surgery with a project entitled: "New methods in sentinel lymph node research: SentiMag," in collaboration with King's College London. In 2017 Specialized in General Surgery. Currently he is teaching from 2019 at Saint Camillus International University of Health and Medical Sciences in the CL Laboratory Techniques. Since April 2020, he has been a Medical Executive Specialist General Surgery DEA Hospital Asl Roma 6-Velletri. He has published 51 international papers (Scopus) as an author.

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