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The use of a new hemostatic preparation made of the cellulose derivatives in surgery: "warning" for postoperative complications!

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ABSTRACT

Introduction. We have read with interest the article by Rustam Abrarovich Sadykov et al. (2019) on "New hemostatic preparation made of the cellulose derivatives" [1]. The Authors present their early experience on new samples of pellicle hemostatic coverage on the basis of the cellulose derivatives. They conclude: "Rapid enough biodegradation of polymer along with the unexpressed inflammatory reaction allows preventing the infecting related to the presence of foreign body. The rapid forming of fibrotic tissue in a zone of lesion makes it possible to obtain a durable hemostasis".

Results. In our series we noted a 10% rate of allergic skin reactions with irritation, redness, itching, swelling, rash and hives in the mammary region, successfully managed with steroids and antihistamine medications. In addition, we experienced a significant seroma in the site of oxidized regenerated cellulose (ORC) placement in 45% of our patients.

Conclusion and Recommendation. When using a new preparation made of the cellulose derivatives, as a possible aid to reduce the risk of postoperative haematoma and infections it is important to discuss with the patient also about possible postoperative complications. It is also important that surgeons specify clearly the use of this biomaterial in the report of the surgical procedure so that radiologists can properly interpret the sonographic findings due to this biomaterial and avoid misdiagnosis and undue alarmism during the follow-up of these patients.

Letter to Editor

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DISCUSSION

We have previously reported our experience with the use of oxidized regenerated cellulose (ORC), at the Catholic Breast Unit of Rome, as a possible aid to reduce the risk of postoperative haematoma and infections and to improve the aesthetic outcomes in patients undergoing an oncoplastic procedures for breast cancer [2, 3].

However, as new hemostatic preparations made of the cellulose derivatives is being increasingly utilized in surgery [1-6], we think that it is important to properly inform the patients not only about the potential advantages but also about possible postoperative complications of these materials. Tanaka et al. [4] report a 18% rate of allergic reaction with the use of ORC, mainly presenting as acute dermatitis and eczema, and one case of exudation followed by wound dehiscence [4].

In our series we noted a 10% rate of allergic skin reactions with irritation, redness, itching, swelling, rash and hives in the mammary region, successfully managed with steroids and antihistamine medications. In addition, we experienced a significant seroma in the site of ORC placement in 45% of our patients [3]. This seroma, that appears in the early postoperative period as consequence of redundant ORC digestion, normally resolved within few weeks with repeated percutaneous aspirations but in two cases it was followed by the

formation of an abscess in the residual cavity that required surgical drainage. We also had a case of a foreign body reaction that required surgical excision to solve the complication (Figure 1).

Besides, we think it is important to call the attention of radiologists on the peculiar findings that preparation made of the cellulose derivatives as ORC may determine on postoperative ultrasound (US) examination, that often lead to undue alarmism.

In our series, peculiar fluid anaechoic accumulation containing small hyperechoic, round components were documented on breast US examination (performed six months after surgery) in all cases. This typical round image (that we named "ile-flottante") (Figure 2), is consequence of the fibrogenetic action induced by ORC and of the partial reabsorption of this biomaterial. It appears non-mobile, avascular, and adherent to the parenchymal tissue planes and is often misinterpreted in an alarming way by the radiologists. The diagnostic interpretations in our patients varied from possible residual disease to haematoma sequaele, local abscess or area of fat necrosis.

Figure 1. A foreign body reaction that required surgical excision after six-month follow-up in a patient treated by breast oncoplastic conservative surgery with ORC.

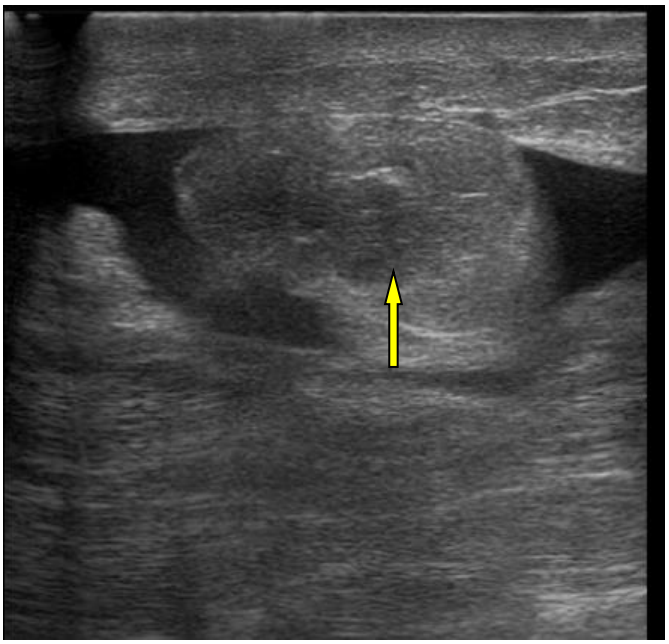

Figure 2. Ultrasound images (Siemens Antares sonography unit, Siemens Medical Solutions, Sweden) at six-month follow-up in three patients treated by breast oncoplastic conservative surgery with ORC. With the use of a high-frequency 10–13 MHz linear array transducer, a free anaechoic collection without wall with the presence of typical small hyperechoic round masses (yellow arrow) in continuity with the breast parenchyma is showed.

CONCLUSION

In conclusion, when using a new preparation made of the cellulose derivatives, as a possible aid to reduce the risk of postoperative haematoma and infections it is important to discuss with the patient also about possible postoperative complications. It is also important that surgeons specify clearly the use of this biomaterial in the report of the surgical procedure so that radiologists can properly interpret the sonographic findings due to this biomaterial and avoid misdiagnosis and undue alarmism during the follow-up of these patients.

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