

### **The First Romanian Robotic-Assisted Mastectomy: A Starting Point for a Literature Review**

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#### **Abstract**

*Background:* The advancements in the field of robotic surgery have led to its use in breast surgery. We report the first robotic-assisted nipple-sparing mastectomy (RNSM) using the da Vinci Xi surgical system, in Romania, for a patient with contralateral breast cancer. Immediate breast reconstruction was performed using a silicone implant. There were no major immediate complications. On this occasion, a systematic review was performed to examine the data on safety, feasibility, oncological and cosmetic outcomes for this procedure.

*Methods:* We reviewed the literature from September 2015 to August 2024 in PubMed, Scopus, and EMBASE. Original studies reporting on patients diagnosed with or at high-risk of breast cancer undergoing RNSM were included.

*Results:* Postoperative complications of RNMS were minimal and comparable to those observed with conventional nipple-sparing mastectomy. Furthermore, two studies found that RNSM resulted in significantly lower rates of skin and nipple-areola complex necrosis compared to open surgery (0% vs. 12.5% and 2.4% vs. 15.2%, respectively). Additionally, robotic-assisted mastectomy was linked to greater overall cosmetic satisfaction. On the other hand, the total costs and operating times for robotic procedures were higher than those for open surgery.

*Conclusion:* RNSM is a feasible technique for prophylactic purposes, with both advantages and disadvantages. Although emerging data support the oncological safety and potential benefits, future studies are needed to validate its efficacy in cancer treatment.

**Key words:** breast cancer, nipple-sparing mastectomy, robotic surgical procedures