

Summary

In Denmark, breast cancer is the most commonly diagnosed type of cancer in women, and breast reconstruction is becoming an integrated part of rehabilitation. Most patients can now be offered breast reconstruction because of the wide range of reconstructive procedures. Breast implant reconstruction is the most frequent, even though a history of radiation therapy has well-known disadvantages. Long-term prospective evaluation of the postoperative course of women who undergo breast reconstruction is still needed. Since 1999, information on breast implant surgery in Denmark has been registered in the Danish Registry for Plastic Surgery of the Breast, which provides an opportunity to explore the uptake and performance of cosmetic and reconstructive breast implantations.

The aims of the present thesis were to evaluate

- Long-term postoperative complication frequencies after immediate and delayed one- and two-stage breast implant reconstructions without a history of radiation therapy.
- The association between radiation therapy and capsular contracture or reoperation in delayed breast implant reconstructions.
- The association between level of education and breast reconstruction in a nationwide cohort of Danish women whose breast cancer was treated with mastectomy.

The main findings of the four studies were:

- After non-irradiated delayed breast implant breast reconstructions, the overall 10-year risk estimates were 68.1% for any complication and 38.6% for reoperation. Significantly higher risk estimates were found for infection, seroma and extrusion of the implant after two-stage than after one-stage procedures, whereas the risk of reoperation was significantly higher after the one-stage procedure. With both procedures, reoperation was required mainly because of asymmetry or displacement of the implant.
- A significantly higher risk for capsular contracture was found after irradiated one- and two-stage procedures than after non-irradiated procedures. Furthermore, the risks for infection and seroma were higher after irradiated two-stage than after non-irradiated procedures. Radiation therapy was associated with an increased risk for reoperation and severe capsular contracture for both procedures.
- After non-irradiated immediate breast implant breast reconstructions, the overall 8-year risks were 76.4% for any complication and 40.6% for reoperation. Higher risks for infection, hematoma and seroma were found after expander implantation after permanent second implantation. The risks of immediate complications, such as infection, hematoma and seroma were higher after immediate than after delayed non-irradiated two-stage procedures.
- The chance of undergoing either immediate or delayed breast reconstruction increased significantly with increasing education level and with being affiliated to a hospital with a plastic

surgery department. After stratification by age, the effect of education disappeared for the youngest women, regardless of the type of breast reconstruction.

When to offer breast implant reconstruction and to whom are complex issues. Both clinical and non-clinical factors are important and influence who seeks and is offered breast reconstruction. Breast implant reconstruction is associated with substantial risks for complications and reoperation regardless of procedure (immediate or delayed, one- or two-stage), and women should be informed about these risks when seeking breast reconstruction. If radiation therapy is needed, other reconstructive options than the implant based should be considered, in view of the high risk of complications.