**Direct-to-Implant Breast Reconstruction with low Complication Rates - A Single Centre Experience**

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Introduction

Direct-to-implant (DTI) breast reconstruction has gained popularity due to its single-stage approach, reducing surgical burden and recovery time. However, literature consistently reports high complication rates, with prosthesis loss rates ranging from 8-25% in various series, leading many centres to favour two-stage reconstruction. At Panorama Centre for Surgical Oncology, DTI reconstruction represents our most common breast reconstruction procedure. We hypothesized that meticulous planning, surgical technique and patient selection could achieve significantly lower complication rates than those reported in current literature.

Research Question/Aim

This study aims to evaluate our single-centre DTI breast reconstruction outcomes and compare our prosthesis loss rates with those reported in international literature, challenging the prevailing narrative of high DTI complication rates.

Materials and Methods

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| Study Design: | Retrospective descriptive study |
| Setting: | Panorama Centre for Surgical Oncology, Cape Town, South Africa |
| Inclusion Criteria: | All female patients who underwent primary DTI breast reconstruction following mastectomy from 2017-2024 |
| Technique: | Standardized DTI approach with careful patient selection, detailed pre-operative planning, optimal tissue handling, and multidisciplinary collaboration between breast oncology and plastic surgery teams |
| Data Collection: | Prospective database analysis including demographics, genetic status, cancer diagnosis, surgical outcomes, and complications with focus on prosthesis loss |
| Statistical Analysis: | Descriptive statistics with frequencies and proportions. Literature comparison analysis. |

Results

Patient Demographics:

- Total DTI reconstructions: 203 patients
- Age: Mean 50.1 years (range 29-83 years, median 49 years)
- Study period: 2017-2024 (7-year experience)
- Complete surgical data: 177 procedures

Patient Indications:

- Prophylactic risk reduction: 49 patients (24.1%)
    - BRCA1: 20 patients (40.8%)
    - BRCA2: 17 patients (34.7%)
    - Other pathogenic variants: 12 patients (24.5%)
- Therapeutic reconstruction: 154 patients (75.9%)
    - Ductal carcinoma: 82%
    - Lobular carcinoma: 17%
    - Other histologies: 1%

Primary Outcome - Prosthesis Loss:

- Panorama Centre rate: 3.4% (7/203 patients)
- Literature comparison:
    - Reported DTI failure rates: 8-25%
    - Our results represent a 60-85% reduction in prosthesis loss compared to published series

Secondary Outcomes: [Additional complication data to be completed - contracture, infection, reoperation rates]

Conclusions

This single-centre experience demonstrates that DTI breast reconstruction can be performed with significantly lower complication rates than those reported in international literature. Our prosthesis loss rate of 3.4% challenges the conventional wisdom that DTI reconstruction inevitably carries high failure rates. These results suggest that with appropriate patient selection and planning, meticulous surgical technique, and experienced and dedicated multidisciplinary teams, DTI reconstruction can be the preferred method for immediate breast reconstruction.

Clinical Significance: These findings support DTI reconstruction as a safe and effective single-stage option that may reduce the need for multiple procedures while achieving aexcellent outcomes. Our experience suggests that previously reported high complication rates may be avoidable with optimized surgical approaches in a multidisciplinary setting

Future Implications: This data supports broader adoption of DTI techniques and warrants investigation into the specific technical and selection factors contributing to these superior outcomes.

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*Note: This is a provisional abstract. Additional outcome data, technical details, and comprehensive literature comparison will be completed before final submission.*