To Dilate Or Not To Dilate: Improved Complication Rates In Skin Sparing And Nipple Skin Sparing Mastectomies Using The Dilation Technique

Fiona Denham, M.D., Amy Rivere, M.D., Brooke Wilson, B.S., Daniela Ochoa, M.D., Ronda S. Henry-Tillman, M.D., Kara Spinks, M.D., Lauren Eades, Soheila Korourian, M.D., James S. Yuen, M.D., Keith Wolter, M.D., Eric Wright, M.D., V. Suzanne Klimberg, M.D.

INTRODUCTION

Skin sparing mastectomy (SSM) and nipple skin sparing mastectomy (NSSM) are oncologically safe procedures. Preservation of the entire skin envelope and nipple offers improved cosmesis and eliminates nipple reconstructive surgeries. Mastectomy skin flaps can be created using sharp dissection, electrocautery, tumescence, blunt dilation, and other mechanisms. These long skin flaps are susceptible to ischemic events and complications such as necrosis, wound dehiscence, and infection, reported to be as high as 40% in the literature. Complication management includes IV antibiotics, serial debridements with complex closures, nipple loss, and exposed or infected tissue expanders/implants requiring removal.

HYPOTHESIS

We hypothesized that developing the dissection plane for the skin flaps using a serial dilation technique with cervical dilators significantly reduces postoperative complication rates in SSM and NSSM compared to non-dilation techniques. We also investigated subgroups of each technique based on incision location, categorized as either involving the inframammary fold (IM) or not involving the inframammary fold (NIM).

METHODS

An IRB-approved retrospective chart review was conducted for females >18 years who underwent SSM and NSSM at UAMS from 3/2001-12/2016. Patient, surgical, and treatment variables were collected, as well as data on postoperative complications. Categorical variables were compared using a χ² test with a p value <0.05 to denote statistical significance.

RESULTS

Dilation Technique: Successive dilation with cervical Pratt dilators (16 Fr-44 Fr) bluntly dissects between the breast tissue and subcutaneous tissue in a relatively avascular plane. This technique allows the flap thickness to be customized to each patient. The parallel “tunnels” formed by the dilators are then connected in a dotted line with electrocautery or heavy curved scissors. Skin overlying the NAC is sharply dissected from the underlying glandular tissue.

Nondilation Technique: Development and dissection of the skin flaps was performed with a cold scalpel or electrocautery. No tumescence was used.

TECHNIQUES

We have demonstrated that the dilation technique for SSM and NSSM has improved complication rates over nondilation techniques and is an easily teachable, safe, and efficient approach. Non-inframammary incisions also had statistically fewer postoperative complications; our preferred incision is a vertical infraareolar incision.

REFERENCES