

## COMMUNICATIONS

## A Novel Method for Intraoperative Breast Implant Pocket Assessment: Air Augmentation

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### Dear Editor-in-Chief,

The estimation of breast implant pocket size in aesthetic breast surgery is often a matter of clinical and intraoperative trial and error, which can negatively influence postoperative outcomes. While there

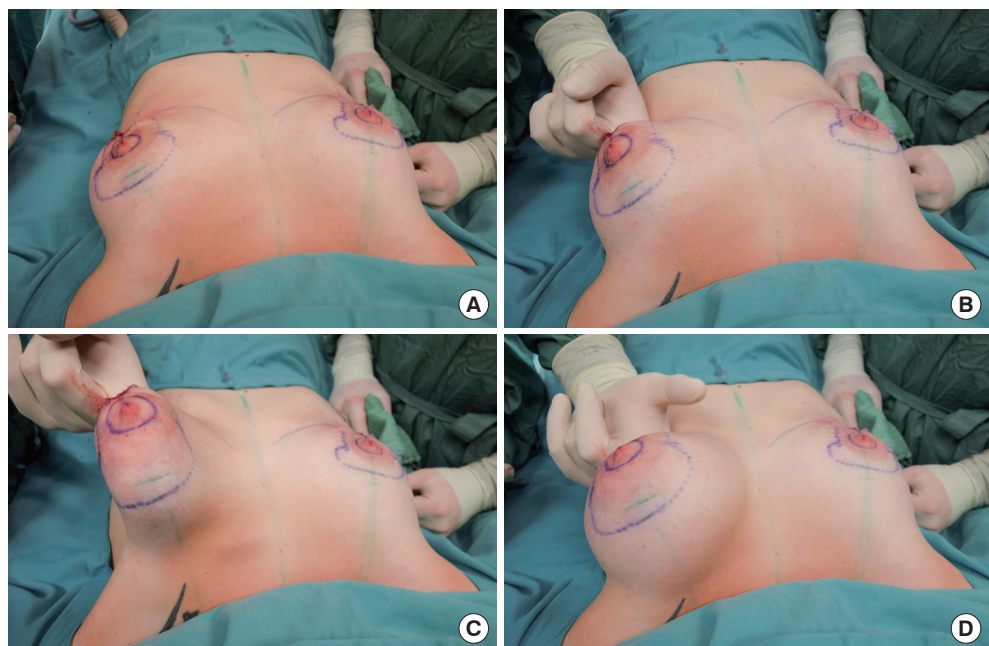
are numerous preoperative and intraoperative techniques and devices to determine the ideal implant volume [1], it can be challenging to evaluate pocket preparation accurately. Herein, we describe a new method of elegantly assessing the extent and quality of implant pocket dissection intraoperatively.

An ideal implant pocket is defined by having a size adequate to fit the chosen prosthesis snugly without being too small, resulting in a distorted implant shape, or being too big, potentially leading to dislocation [2]. To determine if the implant pocket has been dissected sufficiently, we developed a novel technique based on temporally trapping air within the pocket. Employing this air augmentation method allows the progress of pocket preparation to be assessed accurately without substantial technical effort, and provides the opportunity for modifications based on the desired implant volume. Furthermore, it enables the surgeon to judge the edges of the implant pocket, making it a fast and inexpensive technique for assessing the symmetry and extent of the pocket shape.

Using the air augmentation technique, the surgeon is able to check for potential instances of adherence, unevenly dissected edges, and boxiness of the implant pocket before moving forward with breast implant placement. By simply inserting the index and middle finger into the inframammary wound, lifting up his or her hand, and quickly lowering it again air can be trapped into the dissected cavity via a vacuum effect (Fig. 1). The size and shape of the inflated pocket can be evaluated easily (Supplemental Video S1). This is especially helpful in judging the extent of medial release of the muscle and the boxiness of the lateral extent of the implant pocket. The inflated air

Fig. 1. Pocket size estimation using the air augmentation technique

(A, B) A 28-year-old patient underwent aesthetic breast surgery. After dissection of the implant pocket, the surgeon's index and middle finger were inserted into the inframammary wound. (C) The hand was lifted to allow the influx of air into the implant pocket. (D) Quickly lowering the hand while leaving the fingers in the pocket, acting as a plug, trapped the air within the pocket, enabling assessment of the dissected area.



can be forced against the boundaries of the implant cavity, mimicking the shape of the implant.

The air augmentation technique may help with dissection of the pocket, but it is not itself sufficient to support final decision-making about the implant size. However, in our practice, implant size is determined via a thorough preoperative investigation of the patient's body type and aesthetic goals. Relying on the preoperatively determined implant size combined with a precise intraoperative assessment of the adequacy of the pocket size and shape using the air augmentation technique has enabled us to completely omit traditional approaches using trial sizers, which are expensive and time-consuming, and potentially have adverse effects such as increased complication rates and wound edge injury due to friction forces [3,4]. The air augmentation method requires only a short period of practice and is easily reproducible, making it a useful addition to the technical armamentarium of both novice and expert surgeons.

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**Supplemental Video S1.** Air augmentation performed intraoperatively to assess implant pocket dissection.

**Supplemental data can be found at: <http://e-aps.org/src/sm/aps-44-354-s001.mp4>**