Preoperative localization of nonpalpable breast cancers is commonly accomplished with hooked wires under either ultrasound or stereotactic guidance.

Inherent drawbacks to this method include preoperative migration, inefficacy for superficial lesions, and patient discomfort. At our centre, another hindrance to this method is the scheduling conflicts and inefficiencies as a result of necessitating insertion on the same day of a planned lumpectomy.

Iodine-125 (I-125) radioactive seed localization (RSL) is quickly gaining popularity as a safe and reliable method of preoperative breast localization for nonpalpable breast lesions (1-3). Recent studies point to its superiority over traditional wire localization (WL) with respect to accuracy of lesion localization and decreased need for re-excision (4-7). RSL has also demonstrated improved patient satisfaction and comfort (7,8).

RSL was introduced in our center six years ago and has now surpassed WL as the localization method of choice by the majority of our surgeons; we present our experience.

Materials and Methods
A retrospective observational study at a single academic institution involving total of 548 localization procedures performed in 2013 and in 2016. There were 486 eligible patients: 292 WL procedures in 2013 and 194 RSL procedures in 2016. Electronic patient records, pathology reports, and specimen X-rays were reviewed.

The following were recorded for each localization procedure:
- time from diagnosis to surgery
- time from localization to surgery
- resection margins (positive, close, negative)
- specimen size
- seed migration or loss
- surgeon performing the resection
- pre- and post-operative histology

Specimen X-rays were reviewed by a fellowship-trained breast imaging specialist (A.K.) with 13 years of experience to assess for seed migration.

Significant seed migration was defined as migration of over 1 cm on specimen X-ray when compared to the post-localization mammogram.

Positive margins were defined as tumour at ink.

Close margins were defined as less than or equal to 1 mm.

Reference: