Since the TARGIT-A and ELIOT trials, Intraoperative Radiation Therapy (IORT) has become an acceptable modality for delivering post-excision radiation in stage I and II breast cancer patients.

Minimal data are available about side-effects associated with X-ray IORT using the Xoft Axxent Electronic Brachytherapy System (Xoft, San Jose, CA).

We present data regarding local effects and complications associated with IORT in 1000 breast cancer patients treated at our institution with a median follow-up time of 32 months.

1000 breast cancers were treated with 20 Gray using the Axxent System at Hoag Memorial Hospital Presbyterian from June 2010 to January 2018 (Figure 1).

A stainless-steel shield was used to protect internal organs from possible radiation effects (see addendum).

Patients were evaluated 1 week, 1 month, 6 months, 1 year post-operatively for acute (present at 1 month) and chronic (present at 6 months) complications. Thereafter, data were collected yearly.

The majority of both acute and chronic complications were grade I and of minor clinical significance.

If grade I erythema, fibrosis and hyperpigmentation were removed, only 41/1000 (4.1%) had significant clinical complications (Table 1).

The rate of acute and chronic skin complications in our cohort was low compared to skin toxicity rates observed in patients treated with WBRT.

X-ray based IORT therapy can be used to safely treat women diagnosed with early stage breast cancer with relatively few complications.

The first 27 women in our cohort experienced an unexpected adverse device side-effect. Tungsten particles from the tungsten rubber shield were identified in the patients at their 6 month mammograms. This was immediately reported to the FDA and the IORT Program was halted until a stainless steel shield was available 9 months later. All 27 patients were immediately advised of this complication and referred to appropriate consultants. No significant illnesses have been reported to date secondary to the tungsten exposure.