



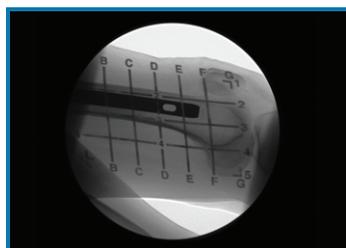
X-Grid™ Radiopaque Adhesive

1



Apply to the skin

2



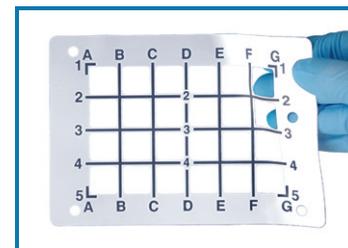
Grid is visible on the X-ray

3



Correlate and mark via
the open windows

4



Remove from skin or
perform through windows

Disposable, adhesive radiopaque grid with open windows

Target Tape's X-Grid is a disposable, radiopaque adhesive grid that can be utilized with fluoroscopy or with large plain films that allow for a superior visualization.

The X-Grid radiopaque adhesive conforms to the patient, with open windows to allow for the marking of the skin sites. The devices can come sterile packaged for intra-operative use.

Various sizes possible

The grids can be custom sized for different procedure types in various regions of the body. The Small X-Grid has a grid that is 8 cm by 12 cm, with 2 cm increments.

A large X-Grid is available that is 6" by 8", with 1" increments.

Benefits

Depending on the method of use, X-Grid can provide the following significant benefits:

- Accurate, 50% smaller incisions³
- Faster procedures¹
- Less dependency on palpation and landmarks
- Less radiation, reduced fluoroscopy

See the next page for more details on the X-Grid benefits.

Indications and Clinical Experience

X-Grid is indicated for use with X-ray based imaging, to allow for the correlation between the scan and the patient's skin using a grid.

Whenever there is repeated imaging with a metal hand-instrument as a guide, X-Grid may be used more effectively.

- Distal locking screws
- Wire placement with frames
- Pelvic nails
- Foot fractures
- Hardware removal

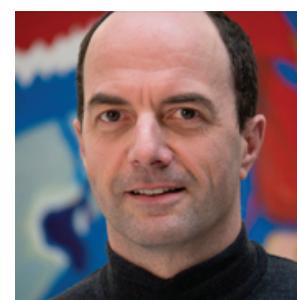
Following the previous scar can be inaccurate due to relative skin movement and body orientation.

“X-Grid allows me to map out my incision sites with just a single image, reducing repeated X-ray exposures I had to take previously, saving time.”

Dr. Piotr Blachut MD Vancouver General Hospital
Orthopaedic surgeon British Columbia, Canada

“I have used the X-Grid successfully for distal locking screws. In the past I would have to take multiple X-ray images. Determining the correct orientation between each of those images and the patient can be difficult and cumbersome. The grid is a simple and elegant map that reduces radiation.”

Dr. Pierre Guy, MD Orthopaedic surgeon at Vancouver General Hospital



1. Kim, et al: Use of a radiopaque localizer grid to reduce radiation exposure. Annals of Surg Innov and Research 2011, 5:6.
2. Rampersaud RY, et al: Radiation exposure to the spine surgeon during fluoroscopically assisted pedicle screw insertion. Spine 2000; 25:2637-45.
3. Tsai KJ, et al: Multiple parallel skin markers for minimal incision lumbar disc surgery; a technical note. BMC Musculoskeletal Disorders 2004, 5:8.

The following is an abbreviated white paper of an X-Grid human cadaver test analyzing the efficacy and accuracy of using a radiopaque grid to find randomized targets. The localization was compared to tries without the grid.

Difficulties of Planning and Identifying Incision Sites in Orthopaedic Procedures and the Applicability of an X-Grid Localization Aid

Dr. Pierre Guy | Orthopaedic Trauma Surgeon, Vancouver General Hospital
Dr. Piotr Blachut | Orthopaedic Trauma Surgeon at Vancouver General Hospital

White Paper
Abbreviated version

Problem

Without fluoroscopic assistance, the surgeon is dependent upon palpation and eye-balling distances, which can prove inaccurate and time consuming, creating longer incisions.

Dependency upon fluoroscopy for localizing can lead to unnecessary radiation exposure, as the current method is cumbersome and requires multiple fluoroscopy shots to localize a position.

Results

Target Tape X-Grid radiopaque adhesive stickers are applied to a patient's skin over the area of interest. A grid pattern on the sticker shows up in medical imaging scans. It may be applied before or during a procedure, providing key visual landmarks to localize positions accurately.

The X-Grid device simplifies the procedure, eliminating dependencies on palpation and eye-balling. On average, the surgeon was five-times more accurate in their localization and required six-times less radiation.

Graph 1 Number of iterated X-ray (fluoro.) images needed to reach the target

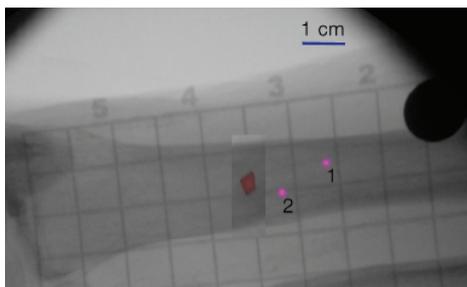
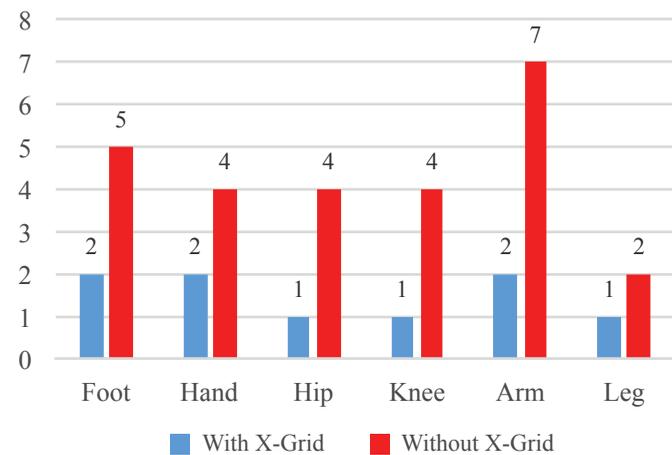


Figure 1.1 With X-Grid, 2 fluoroscopic X-rays were needed in order to localize the surgical site on the tibia.

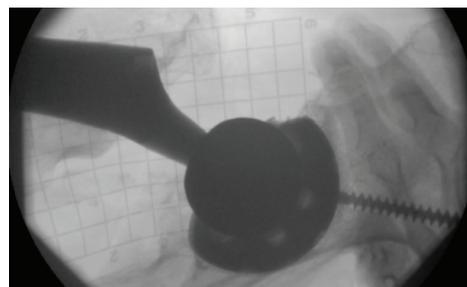


Figure 2.1 With X-Grid, a point in the hip socket was localized with a single fluoroscopic X-ray.

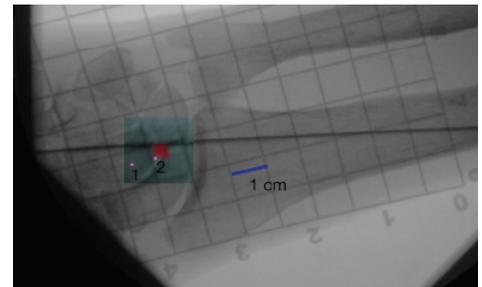


Figure 3 With X-Grid, the target in the hand was localized with 2 fluoroscopic X-rays.

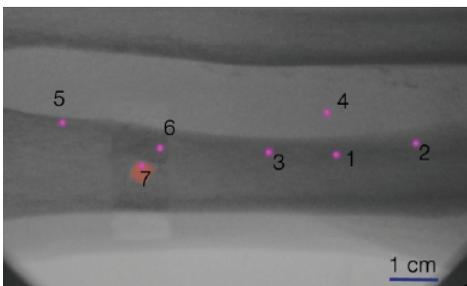


Figure 1.2 Without X-Grid, 7 fluoroscopic X-rays were needed in order to localize the surgical site on the tibia.

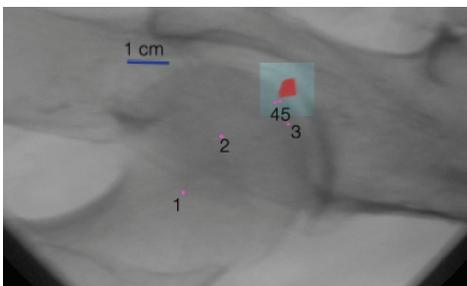


Figure 2.2 Without X-Grid, 5 fluoroscopic X-rays were needed in order to localize the hip target.

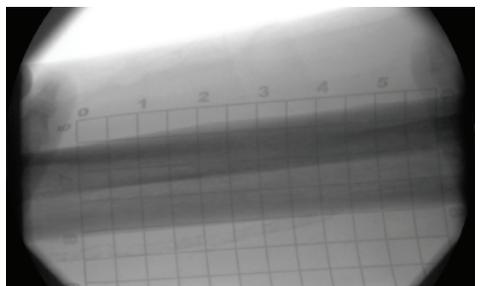


Figure 4 With X-Grid, a target vein was localized with a single fluoroscopic X-ray.