INTRODUCTION
Proximal interphalangeal (PIP) joint arthritis causes debilitating hand pain and instability leading to significant functional impairment [Leibovic, 2010]. Arthrodesis remains the gold standard for treatment of PIP arthritis [Leibovic, 2010]. We present a minimally invasive PIP arthrodesis that provides rigid fixation with a headless compression screw.

METHODS
Seven patients who presented to the senior author with PIP joint arthritis underwent PIP arthrodesis by minimally invasive technique. A 1 cm transverse incision is made over the PIP joint, incising skin, central band, and articular capsule. PIP joint is flexed to expose the articular surface. Articular surfaces are prepared with a fine tipped rongeur, exposing subchondral bone until flat surfaces are obtained. Under fluoroscopy a guide wire for cannulated headless screw (3.0mm, 2.4mm, or 2.0mm) is inserted in an antegrade fashion. It progresses from the center of the proximal phalangeal articular surface until it exits through the dorsal cortex and the distal end lies within the subchondral bone. This is the most critical step of the procedure because the guidewire angle determines the degree of flexion of the fusion. A 5mm incision is made over the guidewire and the wire is advanced through the center of the medullary canal of the middle phalanx. The wire is then overdrilled, length is measured and a headless compression screws is inserted. Reevaluate alignment after insertion of the screws because malrotation may be induced by torque during compression.

RESULTS
Six consecutive patients underwent the procedure by the senior author. All patients healed the arthrodesis without complications and hardware removal was not needed.

SUMMARY
Minimally invasive PIP joint arthrodesis is a safe and viable procedure. Critical portions of the procedure include placing the wire at the angle of the desired angle of fusion and avoiding malrotation during screw insertion.

The main educational objective of my presentation would be:
Educational Objection: To present proximal interphalangeal joint arthrodesis by minimally invasive technique is a viable option.

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