

Using the Quick Couple Drill Attachment as an Intraoperative Metal File

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ABSTRACT

The occasional need to alter or modify plate length during surgery is familiar to most orthopedic surgeons. However, at the modification site, sharp edges may remain. Files or rasps are often used to smooth these edges to prevent local tissue irritation and injury to surgical personnel.

To reduce the potential for personal injury during preparation and implantation, while adding convenience and speed to this procedure, we introduce a technique for filing down sharp edges of plates and implants with equipment readily available within most orthopedic operating rooms.

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With the drill attachment spinning, the knurled surface is used as a burr to smooth the surface of the implant. Secure control of both implant and drill is necessary, and safety goggles are recommended. Filing should be done away from the open surgical wound to prevent metal filings from entering the wound.

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TECHNIQUE

When a plate or implant is to be contoured or filed smooth, the knurled portion of a drill’s quick-connect adapter can be used. The universal Quick Couple drill adapter (Stryker Instruments model 4100-110; Howmedica, Osteonics, Mahwah, NJ), attached to a standard, small power drill, is most often used. Any knurled attachment to a small drill will likely be effective.



Figure 1. Quick Couple drill attachment (Stryker Instruments model 4100-110; Howmedica, Osteonics, Mahwah, NJ).

DISCUSSION

On occasion, orthopedic surgeons must make intraoperative modifications to manufactured internal fixation devices. Modifications include bending or twisting plates using bending pliers, a bending press, or twisting irons.¹ These techniques and

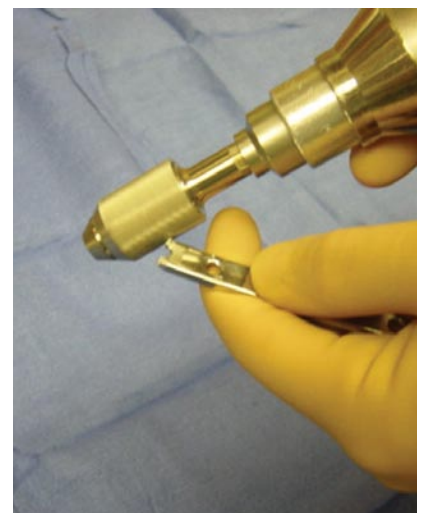


Figure 2. Using the knurled quick couple to file an implant.

tools are widely accepted, and the desired outcome is obtained relatively easily.

However, altering the length of a plate is more complicated. Surgeons often use large wire or rod cutters and tools intended for contouring the plate in order to fatigue-fracture the plate, which results in sharp, irregular edges. Prominent or sharp plate edges have been reported to cause tendon attrition and rupture.²⁻⁴ Sharp

tive time by a considerable amount.⁵ Therefore, the Quick Couple drill attachment functions as a powered rasp to create a precise, smooth edge from a sharp, jagged-edged plate. This attachment is located on the small-and large-fragment sets, which makes it readily available for intraoperative use.

The described technique decreases the risk to the surgeon by decreasing the need to handle sharp-edged hard-

routine uncemented hip replacement.⁷ Although ophthalmic injury from a foreign body is rare, completely enclosing safety goggles should be worn to protect against eye contamination during orthopedic operations.

AUTHORS' DISCLOSURE STATEMENT

The authors report no actual or potential conflict of interest in relation to this article.

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edges have also been implicated in postoperative pain and tenderness.⁵

In the past, manual rotary rasps have been recommended for removal of sharp edges and spurs from bone, which can be likened to removing sharp edges from plates. Robb and colleagues⁵ reported that a few simple rotations of the wrist produce a smooth, rounded surface. However, powered rasps reproduce the action of a manual rasp but in a more precisely controlled manner.⁶ Higher speed allows more control and precision in rasping. Rasping has also been reported as shortening opera-

ware. The surgeon should stabilize the plate by holding the smooth end of the plate while the drill attachment contacts the sharp edges of the plate, creating a smooth surface.

This technique is not without potential complications. First, the drill attachment might become damaged when used as a burr (this has not happened at our institution yet). Second, the attachment might injure the surgeon. According to a report in the literature, an orthopedic surgeon sustained a penetrating eye injury with a metallic particle while hammering a rasp into the femur during

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