Intraoperative assessment of adequate diaphyseal reaming when using the Restoration® stem

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A tip to improve the clarity of vision during intrarenal surgery

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The Restoration® (Stryker, Newbury, UK) femoral stem uses diaphyseal fixation in situations where proximal femoral bone stock is compromised. In order to achieve axial and rotational stability, the femoral diaphysis must be reamed accurately to accommodate the implant's tapered stem. Intraoperative assessment of cortical engagement and adequacy of reaming can be challenging, even with the use of preoperative templating. We have found that when the swarf in the reamer changes from a typical red paste to a chalk-like, powdery white, this indicates adequate cortical engagement (Fig 1). This 'chalk sign' offers an easily recognisable and reliable sign of adequate reamer cortical engagement.

Figure 1 'Chalk sign': white chalky swarf present in reamings

Clarity of vision during ureterorenoscopy is of paramount importance, allowing improved stone clearance and reduced operating time. Several irrigation devices are available but these have significant limitations. We describe the use of a dual spike arthroscopy irrigation set (TUTA, Lidcombe, NSW, Australia). This dual inflow system has a long, built-in fluid chamber. This can be squeezed with ease and provides a boost to the constant flow maintained under normal irrigation. The pressure can be adjusted to suit the need and is controlled manually by the assistant. Volume and flow of the boost remain within a safe range, protecting renal function. Clarity of vision is improved instantly.