and the sucker tip is passed through the tunnel to retrieve the pedicle. The pedicle is then orientated and placed close to the tip and gently suctioned in (Fig 1). The sucker tip is then withdrawn, gently bringing the pedicle with it. If the pedicle is larger, the sucker is reversed, using the wider end (Fig 2).

DISCUSSION

We found this to be a useful technique as it involves minimal pedicle handling. The advantage of this sucker is the rounded tip with an atraumatic opening. It is made of clear material so the pedicle is visible for safe introduction.

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Ankle arthrodesis: using K wires in two planes to confidently correct and maintain anatomical alignment during articular surface preparation

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BACKGROUND

Ankle arthrodesis (Fig 1) is a commonly performed procedure in orthopaedics and one that requires due care and attention when preparing the joint surfaces for fusion. There are six degrees of freedom that, if not specifically thought about, could lead to malalignment and a poor outcome. We propose a technical tip using Kirschner wires as an alignment guide when preparing the joint surfaces.

TECHNIQUE

In a normal ankle, the lateral process of the talus should be directly below the tibia on a lateral radiograph. On an anteroposterior (AP) film, the anatomical axis of the tibia and the talus should overlap. Using these radiological landmarks, we can create a well-aligned fusion site. Once the tibiotalar joint has been fully exposed, and with the use of an image intensifier, 2.0mm Kirschner wires are passed in both sagittal and coronal planes, perpendicular to the anatomical axis for both the talus and tibia. Then, using an osteotome with the

blade aligned in the direction of the sagittal wire, it is advanced from lateral to medial following the direction of the coronal wire. Both surfaces are ultimately prepared and the fusion is compressed and stabilised with a circular frame. Figures 2 and 3 show the wire

Figure 1 Anatomically aligned arthrodesis

Figure 2 An ankle with significant valgus deformation. You can see four K wires numbered; wires 1 and 3 pass from lateral to medial, perpendicular to the anatomical axis.

positions to be perpendicular to the anatomical axes in both bones while Figure 4 shows the osteotome advancing in alignment with the talar wires.

Figure 3 The same wires are labelled; this lateral view shows wires 2 and 4 perpendicular to the anatomical axis in this view. You can also see wires 1 and 3 are significantly divergent, fitting with the valgus deformity on the AP radiograph.

Figure 4 Osteotome advancing from lateral to medial aligned with wires 3 and 4

DISCUSSION

This technique can confidently provide a well-aligned reduction and to the lead authors' knowledge, it has not been described in published literature.

A space suit modification for the COVID-19 era

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BACKGROUND

Space suits have been adopted widely in orthopaedics to protect both surgeons and patients. Since COVID-19, their use has been described and recommended in aerosol generating procedures (AGPs)¹. However, there are concerns that negative pressure created by the hood fan allows entrainment of aerosolised coronavirus² into the breathing space.

We have modified a commercially available powered air respirator, Jetstream® (JSP Ltd Oxford, England) (Fig 1), to make it compatible with the Stryker® T4 hood (Stryker Corporation®, Kalamazoo, USA). This has the benefit of eliminating the negative pressure effect and introducing a High Efficiency Particulate Air (HEPA) filter that draws in air from the filter at waist level and into the helmet. This is then expelled below neck level and into the gown.

TECHNIQUE

The Stryker T4 surgical hood has two metal discs on the bottom edge of the visor as shown in Figure 2. With solvent free glue, we

Figure 1 A commercially available powered air respirator, Jetstream®