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**Penthrox for management of fractures, dislocations and more: Orthopaedics in the Emergency Department during the COVID-19 pandemic**

Christian Stephens, Ana Dias, Ciaran Brennan, Mohamed Lazizi, Edward Skinner, Charlotte Angel  
*Royal Cornwall Hospital*

**Aim:** Methoxyflurane has undergone a renaissance using a smaller dose in a handheld 'Penthrox' device. There is minimal literature regarding its use in common orthopaedic management. Our Minor Injury Unit (MIU) was created due to COVID19 pandemic. The aim of this study was to investigate whether a Penthrox device could improve fracture/joint dislocation management and decreased the need for theatre resources at our MIU.

**Methods:** We reviewed all cases where Penthrox was used to facilitate minor procedures within a two month period. We recorded patient demographics, injury, time of admission, discharge and management. Success was defined as fracture manipulation into an adequate position, joint congruence achieved or completion of a planned procedure.

**Results:** 101 Penthrox doses were given to 89 patients over 97 episodes between 24/3/2020 and 26/5/2020. No complications were recorded. There was 100% success rate on fracture manipulation. For joint dislocation: 65% on native shoulder reduction; 30% on prosthetic total hip arthroplasty reduction; 100% on native elbow reduction. Penthrox was also used for other procedures such as wound reviews, removing external fixators, and applying braces with 100% success rate.

**Conclusion:** We have shown that Penthrox is safe and can be used for common emergency Orthopaedic procedures, particularly fracture manipulation. This helped keep operating theatres and other anaesthetic resources free which were especially vital and scarce during the COVID19 pandemic.