

TIPS FROM OUR READERS

## Visual inspection of implant screw access hole with an endoscope camera



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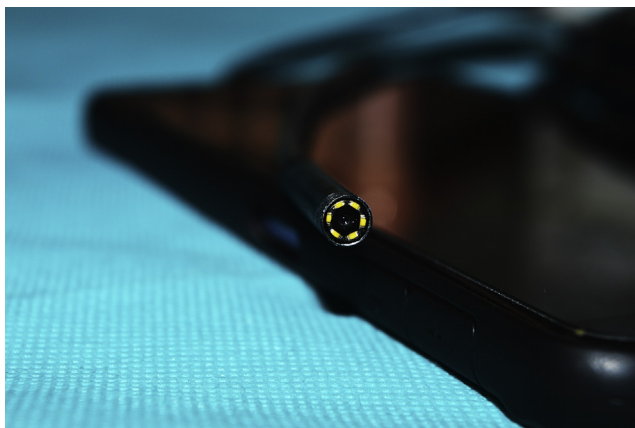
Prosthetic complications may necessitate the removal of an implant-supported restoration.<sup>1-4</sup> Retrieval of cement-retained implant prostheses without any pre-existing index of the screw access hole is challenging as it requires precision from the clinician during attempts to locate the abutment screws.<sup>5,6</sup> Implants placed in unfavorable positions make the visibility of the screw access hole difficult, and the retrieval attempts in such situations pose a threat to the implant components, the intaglio surface of the implant, or the abutment screw.<sup>7,8</sup>

Although several ways of retrieving the abutment screws have been reported,<sup>9-12</sup> the assistance of a magnified view and a flexible intraoral camera cannot be disregarded. This article describes the use of a commercially available endoscope camera for remote and

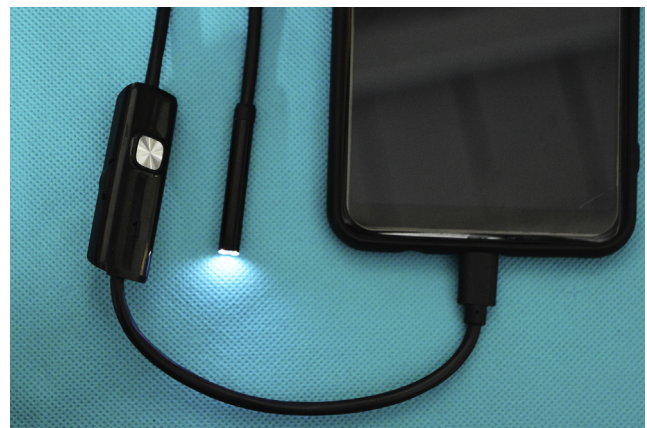
enlarged visualization of the screw access hole, facilitating noninvasive and live viewing systems for efficient clinical practice.

### TECHNIQUE

1. Obtain an endoscope camera (2m Waterproof Endoscope Mini HD 5.5mm lens Camera Tube; MatLogix Pvt Ltd) with inspection light-emitting diode (LED) and universal serial bus (USB) connector for a smartphone or personal computer. Select one that is waterproof and is compatible with the user's phone or computer (Fig. 1).
2. Connect the USB end to the phone or computer and follow the manufacturer's guidelines for product setup and installation (Fig. 2).



**Figure 1.** Inspection light-emitting diode (LED) lights at tip of endoscope.

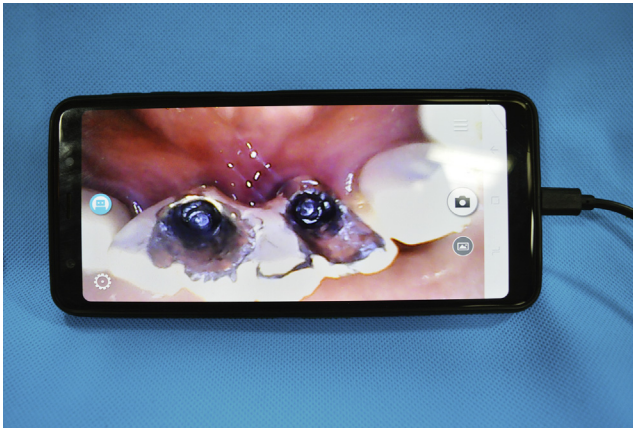


**Figure 2.** Universal serial bus (USB) end of endoscope camera connected to smartphone.

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**Figure 3.** Live images of screw access hole viewed on connected device.

3. Use the endoscope camera to view the screw hole vents and assess the abutment screw head before engaging the retrieval instruments (Fig. 3).
4. Disinfect the endoscope after use with high-level disinfection solution by immersing the device in 0.55% orthophthalaldehyde solution (CIDEX OPA; Johnson & Johnson) for a minimum of 12 minutes at 20 °C or higher to destroy all pathogenic microorganisms.<sup>13</sup> When glutaraldehyde is used, it should be at a 2% concentration level at 25 °C for 20 to 90 minutes.<sup>14</sup>

The micromotion created by a high-speed handpiece to create indentations on the crown may be a disadvantage to using an endoscope camera during the process. However, visual inspection of an unfavorable screw hole vent position using a flexible camera head with adequate lighting from endoscope LED can assist the clinician while engaging the retrieval instruments. The use of an endoscope camera in clinical practice combines the principles of both magnifying surgical loupes in terms of optical benefits, as well as an intraoral camera for patient awareness, enabling the visualization of the oral conditions and allowing effective communication between the patient and clinician.

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**Nirmal Kurian:** Writing - review & editing, Visualization, Project administration.  
**Kevin George Varghese:** Conceptualization, Methodology, Writing - original draft, Writing - review & editing. **Kusha Dhawan:** Resources.

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