

## Urethrocystoscopy Without Fibre Optic Light Source

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### Introduction

Urethrocystoscopic examination is an important, commonly performed procedure in urologic practice. The male and female urethras are both accessible with a rigid instrument. The development of rigid telescopes has undergone remarkable advancement. The initial rigid tube was used to pass down external light, and the observer's eye was placed in line with the end of the tube.<sup>1</sup> Improvement in lighting was obtained by lighting the tube with a bulb at the tip of the telescope, which frequently goes off during a cystoscopic examination. Hopkin's,<sup>2</sup> design of a solid rod lens system was a breakthrough in the optics of endoscopy. Improved illumination with fibre lighting and excellent resolution have made urethrocystoscopy precise, minimally invasive and objects are magnified as viewed under a microscope

Accurate endoscopy needs bright light transmitted from a light source and transmitted to the telescope via a fibre optic cable. Light failure during endoscopy is a regular feature in our environment. The description of a method of circumventing this blackout with a dry cell battery as light source is presented.

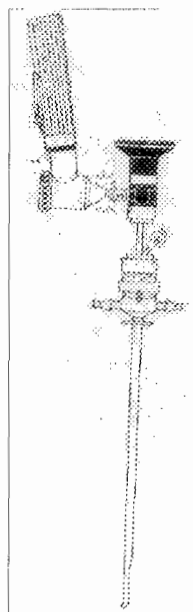
### Technique

The cystoscope is assembled as in Figure 1 and introduced into the urinary bladder in the normal manner for urethrocystoscopy. A light source (1), (auroscope) containing dry cell batteries is applied to the light channel (2) of the telescope, and the procedure continued as in the usual method for urethrocystoscopy. It is possible to take tissue biopsies and cannulate the ureters with this mode of illumination. An auroscope without its earpiece may fit into the telescope light

channel, with adequate fitting to avoid light spillage and provide satisfactory illumination.

A metallic auroscope can be steam sterilized and during the procedure can easily be manipulated by the endoscopists, but an assistant can apply it. This mode of illumination can be invaluable, particularly when there is electric power failure. It is repeatable.

*Figure 1: The assembled cystoscope*



- 1 = Light source. An auroscope with dry cell as light source
- 2 = Telescopic light channel.

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*Disadvantages of procedure*

- The procedure is not a substitute for the bright fibre lighting of the Hopkin's fibre optic/lens system.
- It may be cumbersome to manipulate  
The procedure may be predisposing to contamination and infection and antibiotic prophylaxis may be necessary.

**Conclusion**

The technique described may be useful to an endoscopist working in the tropics, where electric power failure is regular. This technique

might be cumbersome, but may relieve frustration, that was frequently encountered in the pre-Hopkin's times, when endoscopic bulbs blew out at the peak of an endoscopic procedure and must be replaced to continue the procedure.

**References**

1. Michell JP, Makepeace APW. Telescopes and fibre light equipment. In: Chisholm GD, Williams PI (eds). Scientific foundations of Urology. William Heinemann, London, 1976;
2. Hopkins HH. British patent No 954029. 1959