Chapter B
Instruments and Their Care

I. Instruments for Transurethral Surgery

1. Diagnostic Instruments

Among the range of instruments available for diagnostic purposes the so-called panendoscope has nowadays found general application. The chief feature of this instrument is its ability to examine the urethra, prostatic urethra and bladder through a single sheath. For these purposes a slightly forward-viewing telescope (30° Storz or 155° Wolf) is generally adequate. It is only cases in which protruding lobules of adenoma prevent a full view of the bladder that require lens systems with more acute angulation of the optical axis. In fact under some circumstances retrograde-viewing telescopes may be required. The narrow cali­ber diagnostic instruments manufactured by Storz direct irrigating fluid in a jet toward the bladder wall, which is thereby indented somewhat. Thus these instruments allow the bladder wall to be palpated with a water jet (see Ch. G.IV.5.d.).

Such instruments, available in a range of diameters from 15–18 Ch, also permit minor endoscopic procedures such as retrograde injection, coagulation of small bleeding vessels or minute papillomata as well as excision biopsy by means of fine forceps. Depending on the overall diameter, the instrument channel in these cystoscopes measures 5–6 Ch (Fig. 8).

Nevertheless, their chief application is purely diagnostic.

2. Operating Cystoscopes

This term embraces all those instruments of which the operating channel will accept wide-bore probes and special attachments for the introduction of small operating instruments into the bladder (Fig. 9).

Various manufacturers offer these instruments in sizes ranging from 20 to 24 Ch.

Such instruments permit the comminution of small and soft stones by means of small forceps, excision biopsy and even the fragmentation of larger stones with the hydraulic lithotrite.
Fig. 8a–d. A diagnostic cystoscope with a 5 Ch operating channel. This instrument, of only 15.5 Ch diameter, is able to accept the manufacturer’s entire range of telescopes. It is thus not only suitable for a comprehensive examination of bladder and urethra but also allows minor diagnostic and therapeutic procedures. a General view of the instrument with a 5 Ch. miniature biopsy forceps in situ. b Detailed view of the vesical end showing the same biopsy forceps. c As above, but with a ureteric catheter introduced. d The cystoscope equipped with a hooked probe. Alternative equipment includes a fine injection needle for local anesthesia of small areas of the bladder mucosa and a fine coagulating wire.

Generally speaking, however, the repertoire of the operating cystoscope has been considerably diminished by the advent of true transurethral resection instruments. This development has been particularly fruitful in the treatment of bladder tumors by coagulation, since this had not previously been adequately radical. Of equal importance in this respect are the so-called coagulating cystoscopes with their retrograde-viewing and operating facilities (Fig. 10).

It is important to note that these working attachments may also be introduced through the resectoscope sheath. There has thus been a development towards the concept of a modular instrument set.

All these instruments will accept the full range of available telescopes, from pure forward- to retrograde-viewing.

An intermediate position between operating cystoscope and resectoscope is occupied by an instrument described by ENGBERG (unpublished). This narrow caliber resectoscope (Fig. 11) has an additional special channel allowing the