Development of endoscopic perforator interruption is described fully elsewhere in this volume. In brief, in 1985, Hauer reported use of endoscopic instruments to divide perforating veins in the subfascial space of the lower extremity. Variations of the technique were then described, including use of a mediastinoscope to access the subfascial space, and distention of the subfascial space with either saline or carbon dioxide to help visualize the perforating veins. In 1996, Gloviczki reported a patient experience in which perforating veins were divided using video-guided endoscopic instruments, subfascial carbon dioxide insufflation, and preoperative leg exsanguination to facilitate dissection. The technical armamentaria which is available now to perform this type of procedure will be described in this chapter.

A typical cart containing a video monitor, carbon dioxide insufflator, light source, video recorder, and video printer is shown in Fig. 10.1. Before making the first skin incision, the leg may be exsanguinated with an Esmarch bandage followed by inflating a thigh tourniquet to 300 mmHg. Tourniquet pressure and time of inflation are monitored.

After making a 10–15 mm incision over the medial aspect of the superficial posterior compartment, a variety of instruments are available for entering the subfascial space. After identifying the fascia by blunt dissection with narrow blade retractors (e.g. Army/Navy type), a 1 cm incision in the fascia is made, through which a 10 mm trocar is placed. Disposable and reusable trocars can be used (Fig. 10.2). Alternatively, blunt dissection to find the fascia can be avoided by inserting a Visiport-type trocar (Autosuture Company, Norwalk, CT) through the skin incision (Fig. 10.3). This device consists of a 12 mm trocar with a transparent solid end. A blade is incorporated into the end that can be advanced with a trigger control. Under direct vision, the subcutaneous fat is traversed, the fascia incised, and the trocar advanced into the subfascial space.
Fig. 10.2. Top: 10-mm reusable trochar (Snowden Pencer Inc.; Atlanta, GA), Middle: 10-mm disposable Endopath trochar (Ethicon En-Surgery; Cincinnati, OH), Bottom: 5-mm disposable Endopath trochar (Ethicon En-Surgery; Cincinnati, OH).

Fig. 10.3. Visiport (Auto Suture Company; Norwalk CT).

Fig. 10.4. Spacemaker Balloon Dissector (General Surgical Innovations, Inc.; Palo Alto, CA).

Fig. 10.5. Spacemaker Balloon Dissector with cover being removed.

Fig. 10.6. Spacemaker Balloon Dissector with balloon filled with saline.