An improved medical scoping device that could overcome the problems associated with looping and so reduce discomfort to the person on whom the procedure was being performed, would offer immediate advantages to patients and clinicians alike.

BRIEF SUMMARY OF THE DISCLOSURE

According to a first aspect of the present invention there is provided a cover for a medical scoping device shaft, the cover comprising an elongate tubular member and being arranged for application over a distal tip of the medical scoping device shaft with the cover extending along at least a part of the length of a distal end of the shaft, the tubular member comprising an inner surface at least a part of which grips the shaft and ~~acts to~~ holds the cover in place and an outer surface comprising a plurality of spaced projecting elements wherein the spaced projecting elements are hinged and attached to an outer surface of the elongate tubular member, each projecting element having a tip and a base that are moveable about their hinged bases by an angle of between 0° (wherein the tips of the projecting elements point towards a proximal end of the medical scoping device) to an angle of 170-180° (wherein that the tips of the projecting elements point towards the distal end of the scoping medical device) or any angle between 0 and 170-180°~~between a resting position to a position wherein the tip of the projecting element is substantially parallel to a longitudinal axis of the medical scoping device and to a position that is at an angle that is approximately perpendicular to the longitudinal axis of the medical scoping device shaft so that the said projecting elements are fanned out to contact with and provide support for and to dilate a lumen wall of a body passage into which the medical scoping device has been inserted~~.

According to a second aspect of the present invention, there is provided a medical scoping device comprising the cover according to the first aspect of the invention releasably attached thereto and covering at least a part of its shaft at its distal end.

According to a third aspect of the present invention, there is provided a kit comprising at least one cover according to the first aspect of the invention and an applicator, optionally the kit further includes a medical scoping device and/or a cutting means and/or a distal end cap.

There is also disclosed~~According to a second aspect of the invention there is provided~~ a medical scoping device comprising an air suction means for removing air from a body passage, an elongate flexible shaft having a proximal end associated with a viewing means and a distal end, the medical scoping device further comprising the cover of the first aspect of the invention releasably attached thereto and covering at least a part of the shaft at its distal end.

There is also disclosed~~According to a third aspect of the invention there is provided~~ a cover according to a first aspect of the invention or a medical scoping device of the second aspect of the invention for use in a scoping procedure.

There is also disclosed~~According to a fourth aspect of the invention there is provided~~ an applicator for attaching a cover to a shaft of a medical scoping device, the applicator comprising a pair of complimentarily mated casings each sized and shaped so as to accommodate a cover for a medical scoping device therein, each casing further comprising an engaging means for releasably engaging the casings to one another and each casing comprising at least one securing means for securing a proximal end of the said cover thereto.

~~According to a fifth aspect of the invention there is provided a kit comprising at least one cover according to the first aspect of the invention and an applicator according to the fourth aspect of the invention, optionally the kit further includes a medical scoping device and/or a cutting means and/or a distal end cap.~~

There is also disclosed~~According to a sixth aspect of the invention there is provided~~ a method of avoiding looping in a medical scoping procedure, the method comprising inserting a medical scoping device shaft having an air suction means for removing air from a body passage into an orifice of an individual under investigation, the medical scoping device further comprising a cover releasably attached to the medical scoping device shaft and covering at least a part of the shaft at its distal end, wherein the cover comprises an elongate tubular member having an inner surface at least a part of which grips the shaft and acts to hold the cover in place and an outer surface comprising a plurality of spaced projecting elements, and wherein when advancing the medical scoping device into the patient's bowel or small intestine and the distal end encounters a bend or loop in the patient's bowel or small intestine, the medical scoping device is withdrawn towards its proximal end causing the projecting elements to splay or fan out and to dilate the lumen of the bowel or small intestine whilst holding the medical scoping device in position, if necessary air is then drawn out causing the body passage walls to collapse around and about the projecting elements thereby drawing the body passage wall into spaces between the projecting elements so said projecting elements engage with and grip the body passage wall, the medical scoping device is then further withdrawn towards the proximal end causing it to straighten and the body passage wall to concertina along the shaft of the scope proximal to the bend or loop whilst the lumen ahead of the distal end opens up, the medical scoping device is then advanced towards its distal end and the bend or loop is navigated.

There is also disclosed~~According to a seventh aspect of the invention there is provided~~ a method of improving endoscopic visualisation, the method essentially comprising the steps in embodiments~~of the sixth aspect~~ of the invention wherein the projecting elements open a lumen and evert thereby flattening colonic folds for inspection during withdrawal whereby visualisation is further enhanced as colonic folds revert to their normal anatomical position permitting light from the medical scoping device to play across the mucosa, thus enabling careful visualisation of the surface of the mucosa that was hitherto hidden or difficult to view.

There is also disclosed~~According to an eighth aspect of the invention there is provided~~ a method of maintaining tip position and improving tip control during an examination, the method essentially comprising the steps in embodiments~~of the sixth aspect~~ of the invention wherein the projecting elements