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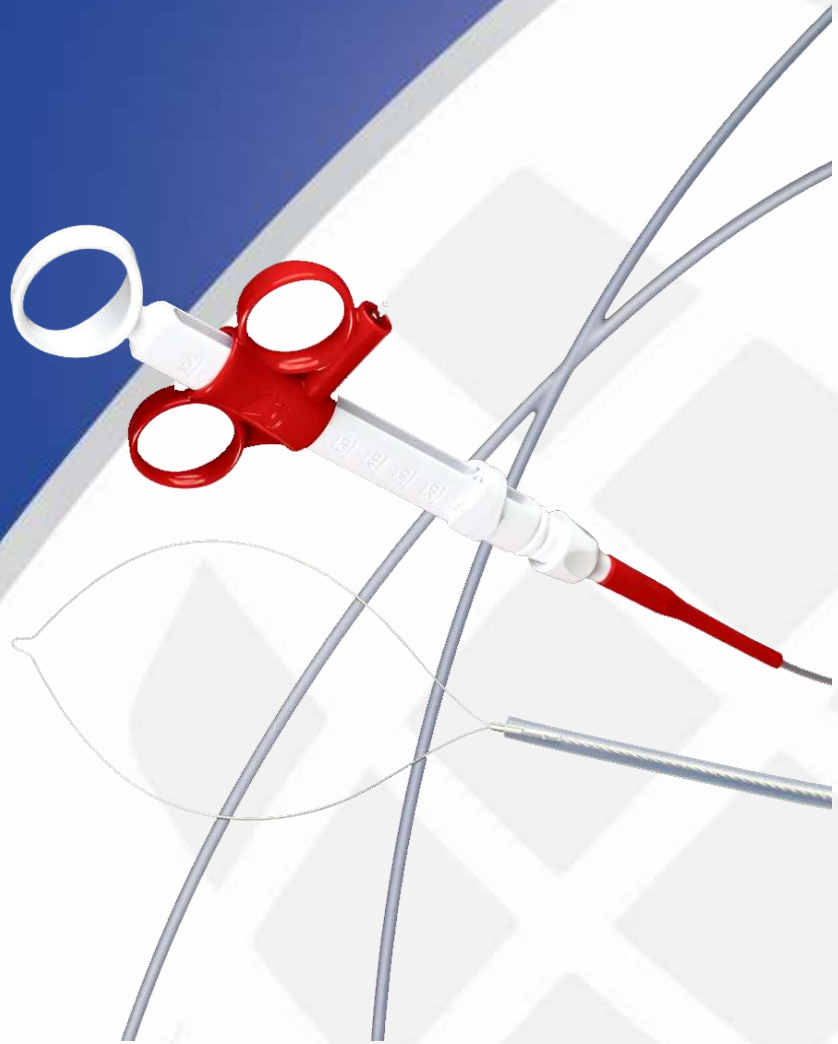
POLYPECTOMY



SNARES

INJECTION NEEDLE

SPRAY CATHETER

INDIGO CARMINE

POLYPECTOMY

Polypectomy is an effective therapeutic intervention. It reduces the expected incidence of colorectal cancer among patients with colonic adenomas by the order of 75%-90%. [1]

Colonic adenomas are common with a prevalence of more than 30% among average risk 50-year olds. [1]

Most colonic polyps are relatively small, at less than 10mm in diameter. Only 10%-20% of polyps are over 10mm in size. More than 80% of polyps encountered at colonoscopy are ≤10mm in size. [1]

GENERAL PRINCIPLES OF POLYPECTOMY

Safe polypectomy implies the ability to resect and completely remove a polyp while achieving haemostasis and maintaining the integrity of the colonic wall. [1]

Two complementary forces operate during polypectomy: monopolar current delivered by the wire snare leads to cauterisation and haemostasis, while the tightening of the wire loop against the plastic sheath of the snare exerts a shearing force that ultimately will transect the polyp at the desired point. [1]

These two forces must operate simultaneously to result in a clean, bloodless polypectomy without excessive thermal injury to the colonic wall. [1]

Either force alone will not safely sever a polyp or ensnare tissue ≥ 10 mm in size. Small polyps of ≤ 6 mm can be safely removed by cold snaring [1]

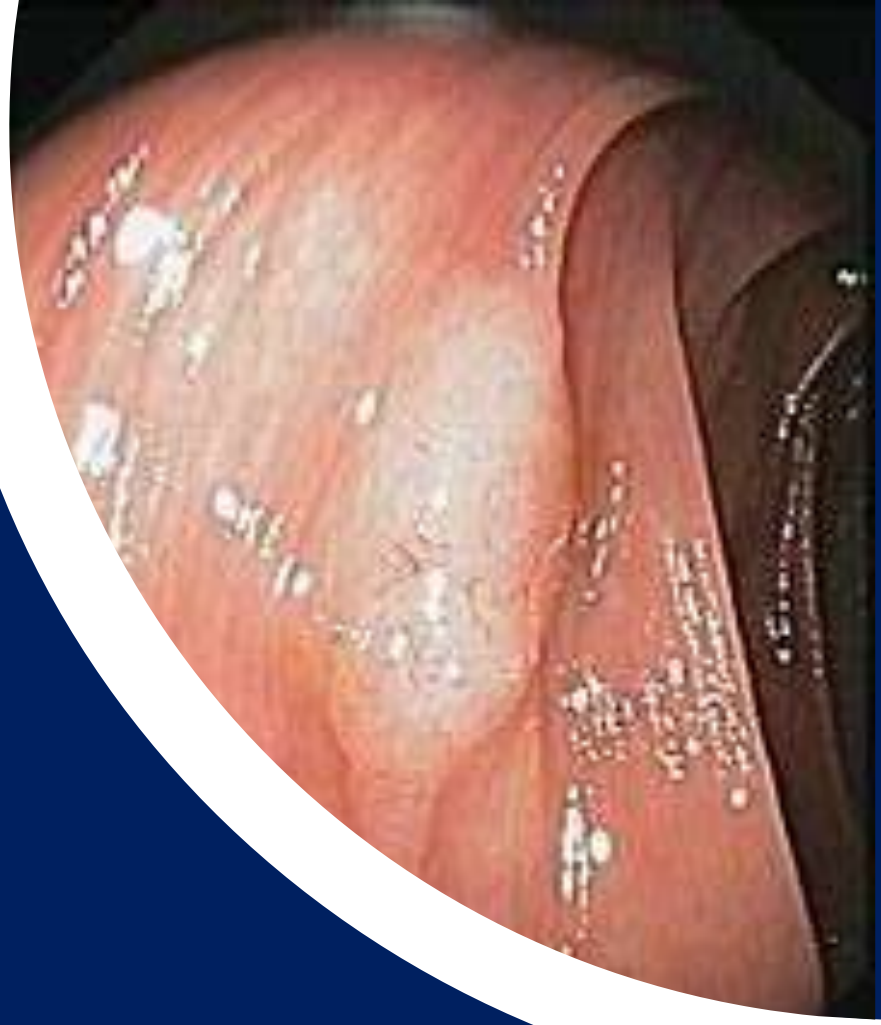
The type and size of a polyp/lesion will determine the type of snare used and if therapeutic measures are required pre and post removal.

IN GENERAL, THERE ARE THREE TYPES OF POLYPS THAT CAN CREATE THERAPEUTIC DIFFICULTIES FOR EVEN THE MOST EXPERIENCED AND PROFICIENT ENDOSCOPIST. THESE CAN BE CONSIDERED AS FOLLOWS:[1]

GENERAL PRINCIPLES OF POLYPECTOMY

SMALL, FLAT SESSILE POLYPS

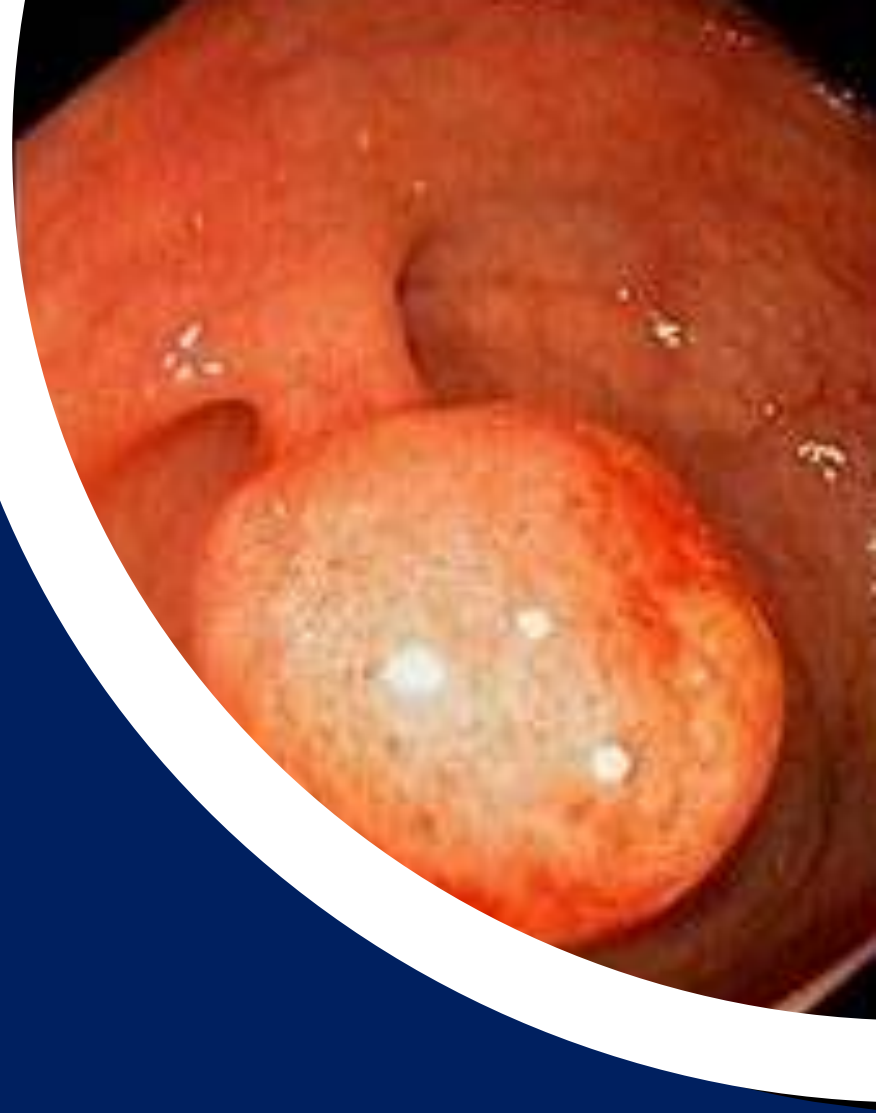
For polyps <10mm cold snaring is recommended. Using a hot biopsy forcep /diathermy has a small unacceptable risk of transmural injury which can lead to perforation, post polypectomy serositis and delayed post polypectomy haemorrhage. [1]



GENERAL PRINCIPLES OF POLYPECTOMY

PEDUNCULATED POLYPS WITH VERY LARGE PEDICLES

There is a risk of post polypectomy bleeding, so it is recommended to consider a haemostatic intervention to the stalk either before (Ligation Loop) or after polypectomy (Clips), particularly when the head of the lesion is in excess of 3cm. [1]



GENERAL PRINCIPLES OF POLYPECTOMY

LARGE FLAT SESSILE LESIONS OR LATERALLY SPREADING TUMOURS

In general, submucosal injection of saline or another solution during polypectomy should be considered:

in the right colon when the base of the lesion exceeds 10 mm

in the left colon when the base of the lesion exceeds 15 mm

if a lesion is hidden behind a fold, pre-injection on the more proximal side beyond the lesion will often elevate it forwards to the colonoscope and facilitate an easy resection [1]

The colonic wall is normally between 2 and 2.5 mm in total thickness. With the use of a submucosal injection, this can be increased substantially. This technique allows for the safe piecemeal resection of extremely large sessile lesions. [1]

COLD POLYPECTOMY versus HOT POLYPECTOMY

COLD SNARING:

Preferred resection method for small and diminutive polyps up to 7mm in size. It is fast, effective, and safe. [2]

Cold snare polypectomy has the advantage of decreased electrocautery-related complications such as delayed bleeding and perforation.

Provides cleaner/sharper cuts and therefore neat margins.

For lesions larger than 7mm it can be difficult to guillotine the tissue without diathermy and bleeding risk increases. A small stiff snare is optimal, and a small rim of normal tissue should ideally be included to ensure comprehensive resection. [2]

HOT SNARING:

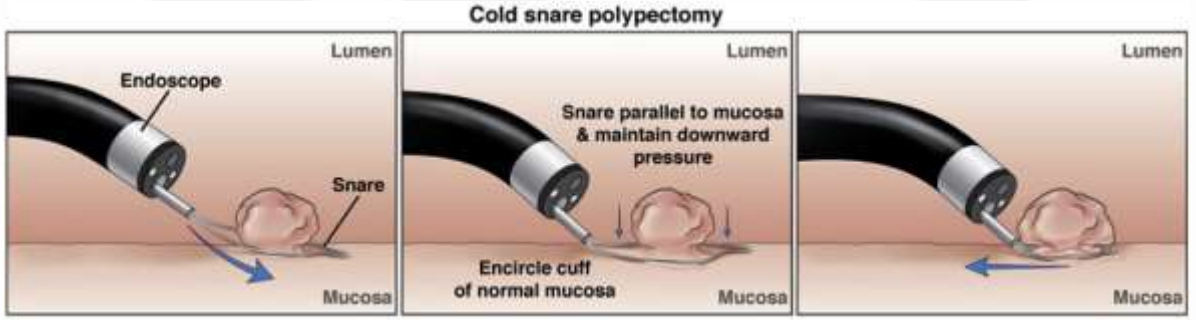
Sessile lesions larger than 7–8 mm in size. [2]

Pedunculated lesions are often also better snared with diathermy when larger than a few millimetres to avoid the risk of bleeding. [2]

COLD POLYPECTOMY versus HOT POLYPECTOMY

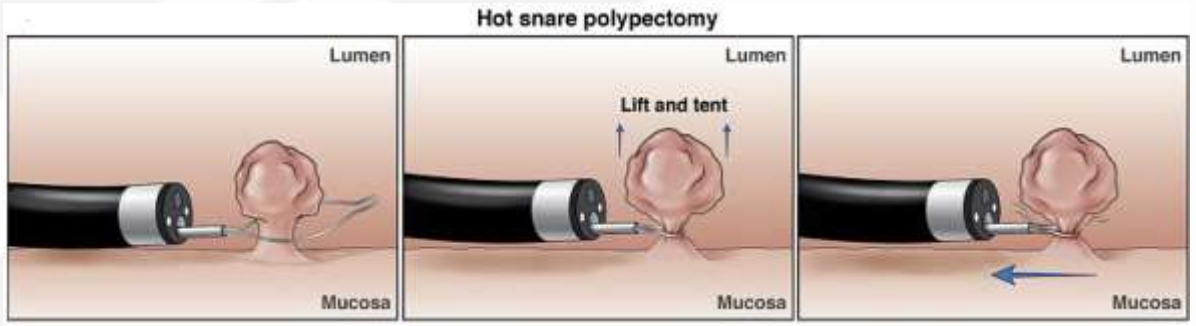
BENEFITS COLD SNARING:

- Suitable for small flat diminutive polyps
- Suitable for flat adenomas
- Assists with clear margin removal
- Decreased chance of rebleed
- Controlled placement
- Clean, precise, and safe cutting



BENEFITS HOT SNARING:

- Suitable for large pedunculated polyps
- Control of bleeding to reduce rebleeding risks
- Assists with margin clearance post piecemeal removal
- Difficult access
- Ideal if you have a ligation loop



DIAMOND CUT™ Cold Snare

SUPERIOR CUT

CLEANER MARGINS

MICRO-TECH™ ENDOSCOPY

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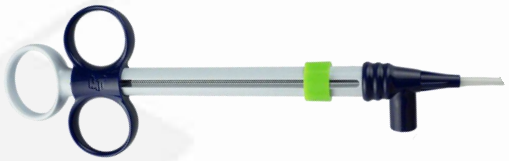
DIAMOND CUT™ Cold Snare



FEATURES	BENEFITS
DEDICATED COLD SNARE	• Specifically designed for resecting small and diminutive polyps using a cold snare technique • Cold polypectomy enables a superior cut with cleaner margins
DIAMOND SHAPE 10MM/15MM	• The diamond shape loop and flexible wire captures smaller polyps with ease
THIN WIRE	• The thin 0.23mm cutting wire provides a guillotine cut that reduces the force required to complete the resection and may limit tearing or snagging
ERGONOMIC HANDLE	• Accommodates various hand sizes • The three-ring handle features a shortened throw and comfortable grip
STIFF CATHETER	• The stiff catheter aids in insertion through an extended scope position while providing support for a smooth effortless cut

COLD SNAP Polypectomy Snare

FOR THE ULTIMATE IN CONTROL AND SUPERIOR CUTTING

COLD SNAP Polypectomy Snare

FEATURES	BENEFITS
COLD HEXAGONAL 10MM SNARE	• The hexagonal shape allows for the manipulation and control of tissue and polyps • 10mm Loop is effective for the resection of small and diminutive polyps • Cold polypectomy enables a superior cut with cleaner margins
FIRM 0.27MM WIRE	• Designed for users who prefer a firmer wire loop for cold polypectomy
ERGONOMIC HANDLE	• For ease of use and user comfort
FULL 1 TO 1 ROTATION	• Ultimate control, facilitating decreased procedure time which can support decreased anaesthetic time

DUOMASTER Polypectomy Snare

FOR THE ULTIMATE CONTROL
HOT OR COLD

DUOMASTER Polypectomy Snare

FEATURES	BENEFITS
HEXAGONAL 10MM/15MM SNARE	• The hexagonal shape allows for the manipulation and control of tissue and polyps
HYBRID	• Designed to perform optimally for both hot and cold snare polypectomy
THIN/ STIFF 0.3MM WIRE 1 X7 FORMATION	• Facilitates a superior clean cut for cold polypectomy • Maintains loop shape even after multiple passes
ERGONOMIC HANDLE	• For ease of use and user comfort
FULL 1 TO 1 ROTATION	• Ultimate control, facilitating decreased procedure time which can support decreased anaesthetic time

HOT Polypectomy Snare

INNOVATIVE

ERGONOMIC

DIMENSIONAL STABILITY

MICRO-TECH™
ENDOSCOPY

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HOT Polypectomy Snare

FEATURES	BENEFITS
RANGE OF LOOP SHAPES - OVAL/HEXAGONAL/DIAMOND	• Provides options for Practitioners thereby meeting their clinical needs
RANGE OF LOOP DIAMETER SIZES - 10/15/24/25 AND 30MM	• Provides options for Practitioners thereby meeting their clinical needs
0.4MM WIRE	• The 0.4mm wire loop maintains its shape and intensity after multiple resections • Provides good radial force, high dimensional stability, and precise cutting
ERGONOMIC HANDLE	• Accommodates various hand sizes • The three-ring handle features a shortened throw and comfortable, secure grip

VARIO HOT Polypectomy Snare

THE ULTIMATE 3 IN 1 HOT SNARE

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VARIO HOT Polypectomy Snare

FEATURES	BENEFITS
COMBINATION HOT SNARE 10/20/30MM	• Eliminates the need to exchange snares during a procedure • Easily manipulated between small and larger sized polyps, reducing procedure time and cost of multiple snares
STIFF 0.4MM WIRE 1X7 FORMATION	• The loop design maintains its shape and intensity after multiple resections • The stiffer wire minimises distal deflection

INJECTION NEEDLE

INNOVATIVE DESIGN

SECURE LOCKING

QUICK RELEASE BUTTON

MICRO-TECH™
ENDOSCOPY

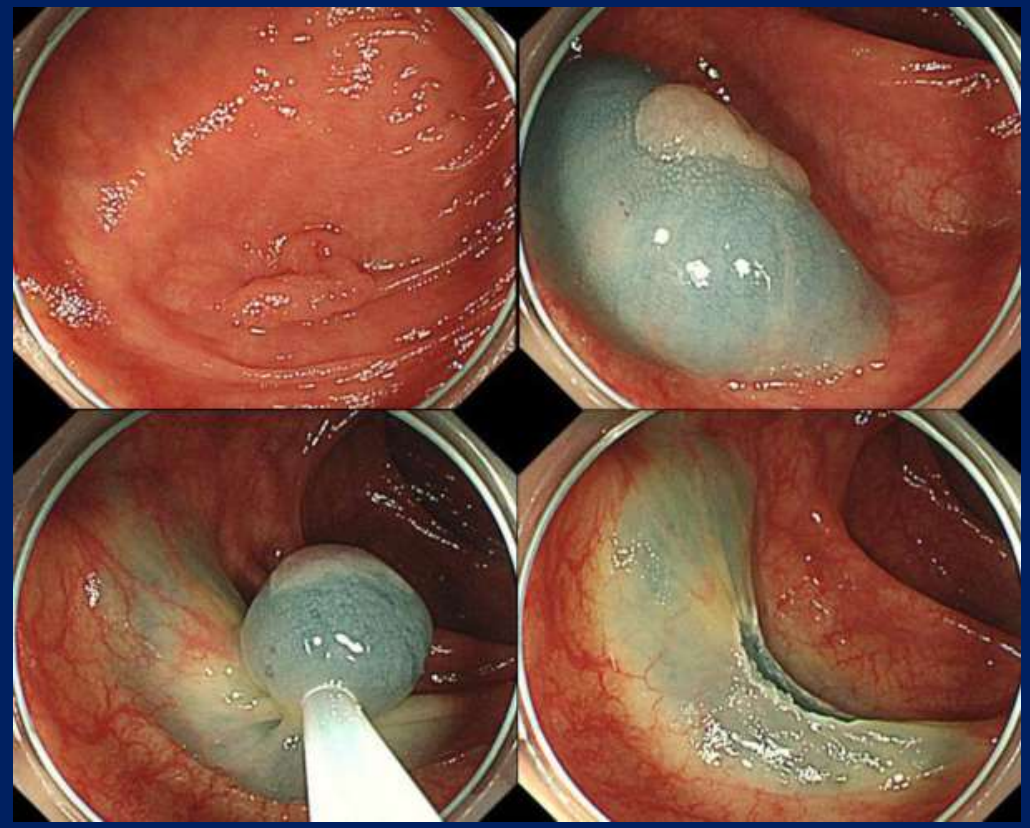
INJECTION NEEDLE

FEATURES	BENEFITS
ONE-HANDED OPERATION	• Ergonomically designed one-handed operation enables confident needle deployment that enables rapid needle retraction • The innovative design limits accidental needle deployment during insertion and removal
LUER-LOCK, SPRING LOADED RATCHET HANDLE	• Provides audible confirmation and secure locking of the deployed needle during use. As the needle is advanced, the ratchet gives tactile feedback and helps to reduce needle bounce • The quick release button returns the needle fully into the sheath • Protects against scope damage and needle stick injuries
PROTECTIVE METAL HUB	• The rounded metal hub protects and guides the needle during insertion and deployment and prevents the needle from penetrating the sheath • The recessed metal end cap and firm catheter aid insertion performance through various scope positions
AVAILABILITY OF VARYING NEEDLE LENGTHS AND GAUGE SIZES	• Contributes to improved clinical outcomes for both patients and clinicians

CLINICAL USES INJECTION NEEDLE

To inject Saline, Adrenaline, Gelofusine and Dyes such as Indigo Carmine for submucosal lift pre-polypectomy and EMR.

(A) (B)



(C) (D)

CLINICAL USES – INJECTION NEEDLE

OTHER USES

Tattooing of the gastrointestinal wall (usually the colon)

Useful for marking the location of a lesion for endoscopic surveillance of a site where a large or malignant polyp has been removed.

Treatment of oesophageal malignancies

The injecting of sclerosants such as 95% ethanol for the debulking of oesophageal tumours.[3]

Gastric motility disorders

Botulinum toxin is currently been used in the treatment of different disorders of smooth muscle hypertonicity in the gastrointestinal tract.

The injection of botulinum toxin has been used in severe refractory cases of gastroparesis in adults and children. It is injected into each quadrant of the pylorus.

Botulinum toxin can potentially inhibit the barrier function at the level of the pylorus, enhancing emptying and providing symptomatic relief. [3]

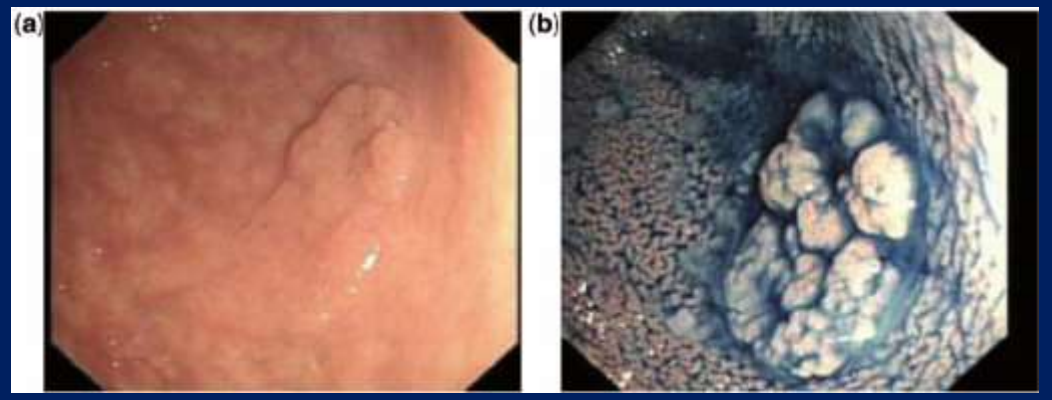
SPRAY CATHETER

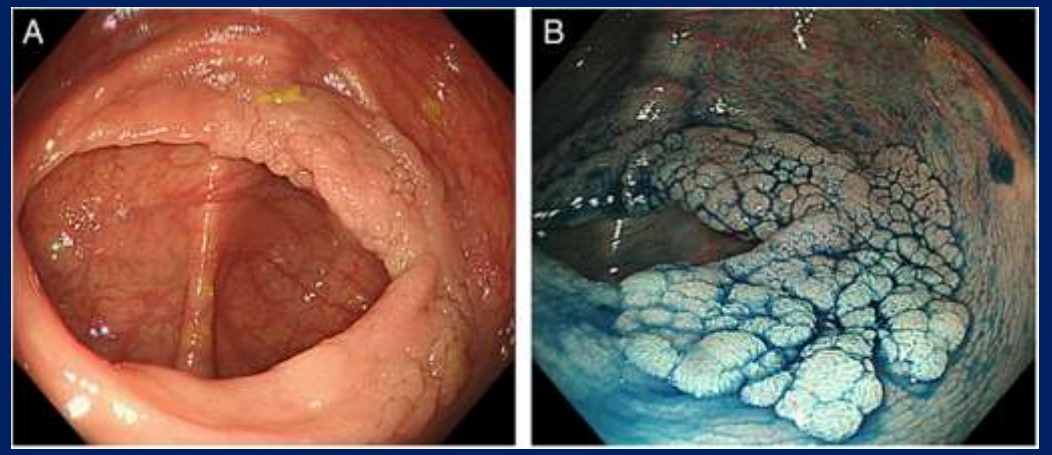
Delivers a wide and even spray for better topographical visualisation of the mucosa

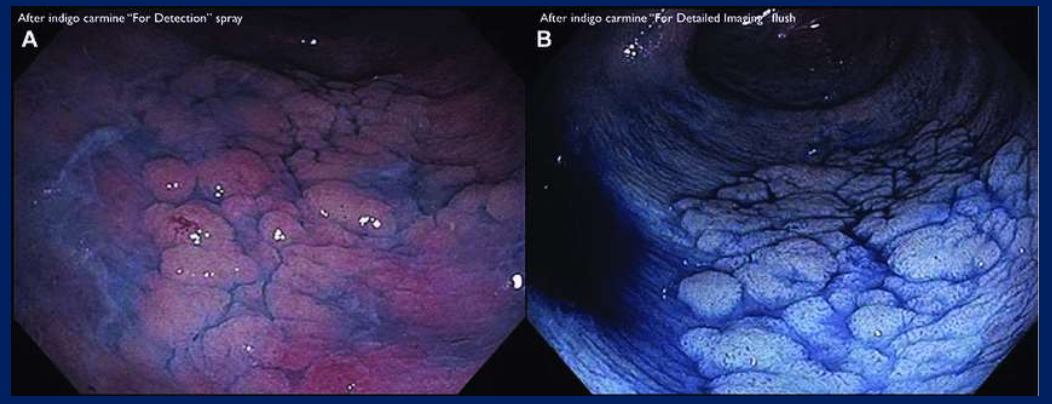
MICRO-TECH™ ENDOSCOPY

SPRAY CATHETER PURPOSE AND USE

A Spray Catheter is used during Endoscopic Dye Spraying (Chromoendoscopy). The injecting of a mucosal stain or pigment down an endoscopic spray catheter allows for better topographical visualisation of the mucosa.







CLINICAL USES – SPRAY CATHETER

Suitable for saline, dyes, and other substances.

Spray Catheters in conjunction with dyes improves the detection and classification of colonic lesions. This is performed during continuous extubation. Only a small volume of dye is applied to avoid excess dye accumulation. The lumen is then re-examined after the excess dye has been aspirated.

The two main dyes available for Chromoendoscopy: indigo carmine, a contrast dye which simply coats the colonic mucosal surface, highlighting subtle disruption to the normal contours of the colorectum caused by mucosal lesions, and methylene blue, a dye which is absorbed avidly by non-inflamed mucosa, but is poorly taken up by active inflammation and dysplasia, creating a colour contrast. [4]

Whilst the type and strength of the dye solution is determined by the user and or facilities guidelines, industry preferences are: 15ml 0.4% indigo carmine to 300ml of sterile water or 20ml methylene blue in 500mls of sterile water. If a darker stain is required, administer more dye to the sterile water as per user's preference.

Prior application of acetic acid has also been used in the upper gastrointestinal tract in some studies. The acetic acid highlights neoplasia (new uncontrolled growth of cells) from the rest of the Barrett segment. [5]

INDIGO CARMINE

TGA APPROVED

STERILE

SAFE

ECONOMICAL

MICRO-TECH™ ENDOSCOPY

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CLINICAL USES - INDIGO CARMINE

Used for polyp delineation: To perform EMR a fluid is injected beneath the lesion to produce a sub-mucosal lift. A plasma expander (Gelofusine) is routinely used, as there is evidence to suggest that this lasts longer and leads to fewer resection pieces than saline. A small amount of adrenaline in the solution is used to avoid oozing and ensure a bloodless field. Indigo Carmine in the solution is used to stain the submucosa. The ideal solution should produce:

A long-lasting high elevation

An avascular field

Good delineation of tissue planes

MICRO-TECH™ ENDOSCOPY

OTHER BENEFITS OF INDIGO CARMINE

Indigo Carmine unlike the vital stains (which are taken up by tissues), is not absorbed by gastrointestinal epithelium. It pools in crevices between epithelial cells, highlighting small or flat lesions and defining irregularities in mucosal architecture, particularly when used with high-magnification or high-resolution endoscopy.

It is used primarily in the colon for the detection and evaluation of colorectal neoplasia and is the most common form of chromoendoscopy applied in the colon. Indigo Carmine is used to evaluate pit patterns. These patterns can help discriminate between hyperplastic polyps (which have a typical “pit” pattern) and adenomatous polyps (which have a “groove” or “sulci” pattern). Pit patterns can also aid in the diagnosis of minute, flat, or depressed colorectal tumours and increase the detection of flat adenomas. Indigo carmine can assist in the detection of dysplastic changes in patients with ulcerative colitis undergoing surveillance colonoscopy, as well as aid in the detection of adenomas in patients with hereditary nonpolyposis colorectal cancer.

Non-absorptive contrast stain for Chromoendoscopy: During continuous extubation, indigo carmine (0.4%) is gently applied to achieve diffuse coverage of the entire mucosal surface. Only a small volume of dye is applied to avoid excess dye accumulation. Re-examine after excess dye has been aspirated. Indigo carmine is easily applied using a special dye-spray catheter. An effective result can also be achieved by utilising the foot pump for spraying Indigo Carmine.

NB: The stains used for Chromoendoscopy are transient, unlike the stains used to tattoo lesions

OTHER BENEFITS OF INDIGO CARMINE

Indigo Carmine unlike other vital stains / dyes is not absorbed by gastrointestinal epithelium providing a safer option for both chromoendoscopy and polyp delineation

One UK study has shown that Methylene Blue but not Indigo Carmine causes DNA damage to colonocytes at concentrations used in clinical chromoendoscopy.

In this particular study, mucosal biopsy samples were taken from the same area of the colon before and after the application of 2 ml of 0.1% methylene blue or indigo carmine dye onto the colonic mucosa.

Patients in the methylene blue chromoendoscopy group, but not those in the indigo carmine group, had significantly greater DNA damage in biopsy samples after dye spraying than before the application of dye.

8 out of the 10 patients that received methylene blue chromoendoscopy had higher levels of DNA damage. [6]

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