"DEVICE FOR FACILITATING FLUID SUPPLY THROUGH AN ANAL CANAL AND METHOD EMPLOYED THEREOF"

TECHNICAL FIELD

[001] The disclosed subject matter relates generally to the field of medical devices, specifically those designed to facilitate the supply of fluid through an anal canal. More particularly, the present invention pertains to a device for facilitating fluid supply through an anal canal and the methods employed therein.

BACKGROUND

[002] The field of medical devices related to facilitating the supply of fluids through anatomical passages plays a crucial role in addressing various health concerns and improving patient comfort. Within this field, the delivery of fluids through the anal canal is a common medical procedure employed for therapeutic, diagnostic, and hygiene purposes. The anal canal, being a sensitive and delicate anatomical structure, requires special attention to ensure patient safety and comfort during fluid introduction procedures.

[003] While there exist numerous methods and devices for delivering fluids into the anal canal, the current state of the art is not without its limitations and challenges. Existing devices often pose technical problems that hinder their effectiveness and patient compliance. Some of the key issues associated with current methods and devices include traumatic insertion, causing discomfort due to their design, leading to patient aversion and reduced compliance. Additionally, the use of conventional methods can be painful for patients, particularly when introducing fluids, such as enemas or medications, which are essential for various medical treatments.

[004] Some of the existing devices require per rectal insertion of an examiner's finger along with the fluid tube, which can significantly increase patient discomfort and may not be well-received by examiners. Moreover, the use of a thin insertion tube increases the risk of fluid leakage, particularly when the sphincter tone is reduced. These devices may also have sharp tips that can cause discomfort and trauma, with severe cases even leading to excessive bleeding, necessitating endoscopic or surgical intervention.

[005] The anal canal measures approximately 5 cm in length, yet existing fluid delivery devices lack indicators to guide both the examiner and the patient (in cases of self-administration) on when and where to stop insertion. This often results in excessive insertion, elevating the risk of trauma and discomfort. Additionally, the absence of insertion guidelines can lead to uncertainties regarding the correct insertion location. Moreover, some devices fail to ensure efficient and uniform fluid distribution within the anal canal, impacting the overall effectiveness of the treatment or therapy.

[006] Furthermore, conventional fluid delivery tubes typically feature a single hole at both the entry and exit points for fluid delivery. This setup requires increased pressure on the fluid source, resulting in longer delivery times for the fluid. The long, slender, and easily collapsible nature of these tubes can lead to kinking during delivery, necessitating frequent adjustments. In some cases, the tube can kink inside the rectum, making fluid delivery difficult. Due to their kinking and collapsible properties, these tubes are challenging to use on patients with obesity, deep natal clefts, or those in a supine position. Additionally, the conventional practice involves using a separate lubricant such as Xylocaine (Lignicaine) jelly, incurring an additional cost for the patient. Moreover, in the context of fluid or drug applications, many patients reuse these devices after washing, raising concerns about contamination.

[007] In light of the existing problems and limitations in the field of facilitating fluid supply through the anal canal, there is a pressing need for innovative solutions that can address these challenges. Patients and healthcare providers alike require a device and method that can offer a smooth function ensuring gentle insertion into the anal canal, minimizing discomfort and trauma. They seek an improved system that can effectively and uniformly deliver various types of fluids, such as water, drugs, ointments, or gels, to the target area. Furthermore, there is a demand for a device designed to reduce pain and discomfort, thereby promoting patient compliance and overall well-being.

[008] The present invention addresses the aforementioned technical problems and fulfills the unmet needs in the field. The proposed device, along with the accompanying methods, introduces

a novel approach to fluid delivery through the anal canal. By employing innovative design elements and features, it ensures smoother insertion, minimizes trauma, and optimizes the delivery of various fluids, ultimately enhancing patient comfort and improving therapeutic outcomes. In conclusion, the present invention offers a unique and valuable contribution to the field of medical devices designed for anal canal applications, revolutionizing the way fluids are supplied through the anal canal for medical and hygiene purposes.

SUMMARY

[009] The following invention presents a simplified summary of the disclosure in order to provide a basic understanding to the reader. This summary is not an extensive overview of the disclosure and it does not identify key/critical elements of the invention or delineate the scope of the invention. Its sole purpose is to present some concepts disclosed herein in a simplified form as a prelude to the more detailed description that is presented later.

[0010] The exemplary embodiments of the present disclosure pertain to a device for facilitating fluid supply through an anal canal and method employed thereof.

[0011] The objective of the present disclosure is to provide a device and method that significantly reduces discomfort and pain during fluid supply through the anal canal, thus improving patient compliance and overall well-being.

[0012] Another objective of the present disclosure is to minimize trauma during insertion into the anal canal, ensuring a smoother and less invasive procedure, which is critical for patient comfort and acceptance.

[0013] Another objective of the present disclosure is to optimize the delivery of various fluids, including water, drugs, ointments, or gels, ensuring efficient and uniform distribution within the anal canal. This will enhance the overall effectiveness of medical treatments and therapies.

[0014] Another objective of the present disclosure is to make insertion into the anal canal easy and straightforward, eliminating the challenges associated with existing methods and devices. This ease of use will benefit both healthcare providers and patients.

[0015] Another objective of the present disclosure is to reduce patient aversion to fluid supply procedures, encouraging individuals to seek necessary treatments or hygiene routines without hesitation.

[0016] Another objective of the present disclosure is to improve patient compliance by creating a device that patients are more willing to use due to its comfort and effectiveness. This, in turn, will lead to better treatment outcomes.

[0017] Another objective of the present disclosure includes versatility in its application, allowing it to accommodate various types of fluids, thereby expanding its utility for different medical and hygiene purposes.

[0018] Another objective of the present disclosure is to ensuring safety and hygiene during fluid supply through the anal canal. The invention seeks to provide a solution that minimizes the risk of infection and maintains a sterile environment.

[0019] Another objective of the present disclosure is to improve patient comfort, reduce complications, and enhance the effectiveness of treatments, the invention aims to contribute to lower healthcare costs associated with anal canal procedures.

[0020] Another objective of the present disclosure is to ensure complete and effective prevention of fluid leakage during medical procedures involving the anal canal. The device is designed to provide a leakproof solution, thereby maintaining a sterile and controlled environment throughout the procedure.

[0021] Another objective of the present disclosure is to function as a self-guiding device, aiding users in knowing where to stop insertion and in which direction to insert. This design makes it exceptionally easy for patients to independently administer fluids through the anal canal. Such a

user-friendly design empowers patients to take control of their treatments and hygiene routines, reducing the reliance on professional assistance and enhancing the overall accessibility and convenience of the device.

[0022] In an exemplary embodiment of the present disclosure, the proposed device mainly comprises three functional parts: firstly, the fluid facilitating probe; secondly, the fluid supply channel; and thirdly, the fluid source. The fluid is supplied by gravity and manually applying pressure to the fluid enclosure, directing it from the fluid source through the fluid supply channel, and ultimately reaching the fluid facilitating probe, which then dispenses the fluid through the anal canal.

[0023] In another exemplary embodiment of the present disclosure, the fluid facilitating probe consists of an upper curved portion, a middle waist portion, and a lower curved portion. The upper curved portion with a gentle curve, optimizing comfort during insertion and enhances patient comfort during the procedure.

[0024] In another exemplary embodiment of the present disclosure, the fluid facilitating probe includes fluid delivery holes designed with smooth finishes to prevent trauma and discomfort during insertion, ensuring patient comfort.

[0025] In another exemplary embodiment of the present disclosure, a pull tab cap is enclosed on the fluid facilitating probe, with the enclosed portion between the pull tab cap and the fluid facilitating probe filled with a lubricating material or gel or other medicated drug. Operating the pull tab cap aids in redistributing the lubricating material or gel or medication across the device, ultimately enhancing patient comfort, treatment effectiveness, and reducing healthcare costs. Additionally, any design or pocket containing some lubricant or gel attached to the fluid facilitating probe further ensures smooth and comfortable insertion during the procedure.

[0026] In another exemplary embodiment of the present disclosure, the upper curved portion of the fluid facilitating probe is tilted towards the fluid delivery holes. Additionally, the middle waist portion is narrowed, and the lower curved portion assumes a larger diameter D2, adopting a round,

oval, or dumbbell shape. In this configuration, the diameter D2 of the lower curved portion exceeds that of the upper curved portion and middle waist portion.

[0027] In another exemplary embodiment of the present disclosure, the middle waist portion of the fluid facilitating probe comprises fluid delivery holes, which are utilized specifically for drug delivery. When delivering medication, these fluid delivery holes facilitate drug administration at the anal canal level, thereby enabling uniform application of medication along the anal canal. This functionality is particularly beneficial for treating anal canal disorders including fissure-in-ano and external hemorrhoids. It's important to note that in the case of administering enema fluid, the presence of fluid delivery holes is not required, ensuring versatility in the device's application.

[0028] In another exemplary embodiment of the present disclosure, the lower curved portion features multiple ridges designed to facilitate self-administration by patients, empowering them to control the depth of insertion through sensory feedback.

[0029] In another exemplary embodiment of the present disclosure, the lower curved portion is equipped with multiple ridges and a red-colored line at the end, providing administrators with enhanced control over the depth of insertion.

[0030] In another exemplary embodiment of the present disclosure, the pull tab cap features corrugated baffles. Operating the folded corrugated baffles will expand, allowing for the free rotation of the curved tip within the cap.

[0031] In another exemplary embodiment of the present disclosure, the upper part of the pull tab cap is closely approximated to the tip of the device. It encloses small openings/fenestrations that typically allow the passage of fluid when the user applies pressure over the fluid storage volume. This close approximation to the cap effectively reduces fluid leakage.

[0032] In another exemplary embodiment of the present disclosure, the fluid supply channel comprises a fluid pipe. The proximal end of the fluid pipe is connected to the fluid delivery holes of the fluid facilitating probe, while the distal end is connected to the fluid source. This distal end

of the fluid pipe features multiple fluid supply holes, facilitating the rapid passage of fluid and reducing the time required for administration.

[0033] In another exemplary embodiment of the present disclosure, the fluid source comprises a fluid storage volume configured to store the fluid. This fluid is supplied by gravity through large wider single hole or multiple fluid supply holes into the fluid pipe. Subsequently, the fluid travels along the fluid pipe and enters the fluid facilitating probe, where it is ultimately discharged through fluid delivery holes into or around the anal canal.

[0034] In another exemplary embodiment of the present disclosure, a fluid control valve is incorporated between the fluid supply channel and the fluid facilitating probe. This valve enables unidirectional flow when the user applies pressure over the fluid storage volume.

[0035] In another exemplary embodiment of the present disclosure, the upper curved portion is designed to direct fluid into the rectal lumen, while the middle waist portion facilitates the contraction of the anal sphincter around the waist, preventing leakage. The lower curved portion's shape and larger diameter D2 ensure a snug fit at the anal verge, preventing fluid leakage. Multiple fluid delivery holes provide gentle and effective fluid distribution without trauma in less period of time, and the ridges act as a visual guide for insertion. Ridges by sensation helps in controlling the depth of insertion in case self-administrated fluids. The pull tab cap allows for easy removal and expands to prevent fluid leakage through small openings. The lubricating material or gel-filled region aids in cost-cutting and topical applications.

[0036] In another exemplary embodiment of the present disclosure, the thumb grip and finger grip portions make the device easy to handle. Multiple fluid supply holes allow rapid fluid administration, while the solid nature of the fluid pipe prevents collapse and ensures the gravity-driven passage of fluid.

[0037] In another exemplary embodiment of the present disclosure, the fluid source can store various types of fluids, including enema fluid, water, drugs, medicated fluids, gels, or ointments.

The fluid control valve ensures unidirectional flow when pressure is applied to the enema bag, preventing unintended fluid release.

[0038] In yet another embodiment of the present invention, the fluid facilitating probe, fluid supply channel, and fluid source may be configured as integral elements, forming a single device. Alternatively, in another exemplary embodiment, the fluid facilitating probe may serve as a separate component, securely attachable to both the fluid supply channel and the fluid source. This design allows for flexibility in device configuration. Moreover, the fluid facilitating probe can be designed to be compatible with existing fluid delivery systems, including enema bags or other drug injecting systems, offering versatility and compatibility with established medical procedures and equipment.

BRIEF DESCRIPTION OF THE DRAWINGS

[0039] Fig. 1 depicts a schematic diagram of the device designed to facilitate fluid supply through an anal canal. This illustration highlights the fluid facilitating probe, the fluid supply channel, and the fluid source, all configured as integral elements within a single device.

[0040] Fig. 2 provides a schematic diagram of the device designed to facilitate fluid supply through an anal canal. This illustration highlights the fluid facilitating probe, which is depicted as a separate component securely attached to both the fluid supply channel and the fluid source. This configuration offers compatibility with existing fluid delivery systems, including enema bags and other drug injecting systems.

[0041] Fig. 3 illustrates a flow chart outlining a method for facilitating fluid supply through an anal canal.

DETAILED DESCRIPTION OF EXAMPLE EMBODIMENTS

[0042] It is to be understood that the present disclosure is not limited in its application to the details of construction and the arrangement of components set forth in the following description or illustrated in the drawings. The present disclosure is capable of other embodiments and of being practiced or of being carried out in various ways. Also, it is to be understood that the phraseology

and terminology used herein is for the purpose of description and should not be regarded as limiting.

[0043] The use of "including", "comprising" or "having" and variations thereof herein is meant to encompass the items listed thereafter and equivalents thereof as well as additional items. The terms "a" and "an" herein do not denote a limitation of quantity, but rather denote the presence of at least one of the referenced item. Further, the use of terms "first", "second", and "third", and so forth, herein do not denote any order, quantity, or importance, but rather are used to distinguish one element from another.

[0044] Referring to Fig. 1, a schematic diagram of a device designed to potentially facilitate fluid supply through an anal canal is presented. This illustration showcases the potential components of the device: the fluid facilitating probe (101), the fluid supply channel (103), and the fluid source (105), which may collectively constitute a single, versatile device (100).

[0045] The fluid facilitating probe (101) is designed with patient comfort and precise fluid delivery in mind. Its upper curved portion (130) may gently guide fluid into the rectal lumen, potentially enhancing the patient experience. The middle waist portion (126) may feature a narrowed profile that could aid in anal sphincter contraction, potentially reducing the risk of fluid leakage. Additionally, the lower curved portion (108) may adopt a larger diameter D2, with options for a round, oval, or dumbbell shape. This configuration, with its diameter D2 potentially exceeding that of the upper curved portion and middle waist portion, could promote a snug fit at the anal verge, potentially minimizing fluid leakage. Notably, this lower section may incorporate multiple ridges (120), and red color mark (121) which may serve as potential tactile indicators for insertion depth. Furthermore, the fluid facilitating probe may incorporate fluid delivery holes (106) with smooth finishes, potentially minimizing trauma during insertion and allowing gravity-driven fluid distribution, at the end in addition to pressure gradient which is created by applying pressure over fluid supply source by hand. When delivering medication, these fluid delivery holes facilitate drug administration at the anal canal level, thereby enabling uniform application of medication along the anal canal. This functionality is particularly beneficial for treating anal canal disorders including fissure-in-ano and external hemorrhoids. In cases where enema fluid is administered, the

enema fluid is discharged through the pull tab cap, which comprises an upper part closely approximated to the tip of the fluid facilitating probe. This upper part of the pull tab cap features small openings or fenestrations to allow the passage of fluid while applying pressure over the fluid storage volume.

[0046] A pull tab cap (102) may be enclosed on the fluid facilitating probe, and the region between the pull tab cap and the probe may be filled with a lubricating material or gel or medication (124), offering potential cost-saving benefits and facilitating potential topical applications. The cap may feature corrugated baffles (128) that, when operated, may potentially aid in even gel or medication distribution. The upper part of the pull tab cap may be closely approximated to the device's tip, enclosing small openings/fenestrations to potentially prevent fluid leakage.

[0047] The fluid supply channel (103) may be equipped with a fluid pipe (116), with its proximal end potentially connected to the fluid delivery holes of the fluid facilitating probe and its distal end potentially linked to the fluid source (105). Ergonomically designed thumb grip portions (110) and other finger grip sections (118), possibly supported by springs, may enhance user handling. This feature ensures that if the user suddenly falls back during an enema procedure, the spring support can provide stability and prevent trauma. Additionally, the distal end of the fluid pipe may incorporate multiple fluid supply holes (114), which potentially expedite fluid passage during administration.

[0048] The fluid source (105) may include a fluid storage volume (134) configured to store various types of fluid (132), such as enema fluid, water, drugs, medicated fluid, gel, or ointment. Gravity-driven fluid flow may potentially be facilitated through multiple fluid supply holes and non collapsible nature of fluid supply tube, with the fluid potentially traveling along the fluid pipe and ultimately being discharged through the fluid delivery holes into or around the anal canal. To ensure controlled flow, a fluid control valve (112) may potentially be integrated between the fluid supply channel and the fluid facilitating probe.

[0049] To potentially ensure controlled and regulated fluid flow within the device, a fluid control valve (112) may be considered for integration between the fluid supply channel (103) and the fluid

facilitating probe (101). The inclusion of such a valve is envisioned as a means to potentially enhance the precision and safety of fluid administration by allowing for the adjustment of flow rates as needed.

[0050] Various fluid control mechanisms may be explored as potential options within the device's design. These mechanisms may include manual valves, which may require user interaction, or solenoid valves, which can be operated remotely and offer versatility in fluid control. Additionally, check valves may be considered to enable unidirectional flow and prevent backflow, while pressure-regulating valves may help maintain consistent pressure levels within the system. Pneumatic valves, electromagnetic valves, and proportional valves may also be evaluated based on the specific requirements of the application.

[0051] In addition, pinch valves, rotary valves, and other potential alternatives may be examined to determine their suitability in achieving the desired level of flow control. The choice of the most appropriate fluid control mechanism may be influenced by factors such as the intended application, the need for precision in flow regulation, available power sources, and the desired degree of automation.

[0052] By thoughtfully considering and potentially incorporating the most suitable fluid control valve mechanism, the device may be equipped to effectively and safely administer fluids during medical procedures while providing flexibility in adjusting flow rates when necessary.

[0053] In one non-limiting exemplary embodiment, the fluid facilitating probe, fluid supply channel, and fluid source may potentially be configured as integral elements, potentially forming a single, user-friendly device. This design may potentially simplify fluid administration procedures, potentially enhancing patient comfort and convenience.

[0054] In accordance with the non-limiting exemplary embodiment of the present invention, the fluid employed in this device is versatile, encompassing a wide range of possibilities to suit diverse medical needs. This fluid may take various forms, including, but not limited to, enema fluid, water, pharmaceutical drugs, ointments, medicated fluids, or gels. Such flexibility in fluid options ensures that the device can cater to a multitude of non-limiting medical applications, from therapeutic

treatments to non-limiting topical applications, enhancing its adaptability and utility across a spectrum of non-limiting healthcare scenarios.

[0055] Overall, the device's functional aspects may offer potential advantages that include gentle and precise fluid delivery, potential tactile and visual guidance for insertion depth, potential cost-effective gel utilization, ergonomic handling, and potential enhanced control over fluid flow, which may collectively contribute to improving the overall potential patient experience during anal canal procedures.

[0056] Referring to Fig. 2, it provides a schematic diagram of the device designed to potentially facilitate fluid supply through an anal canal. This illustration primarily highlights the fluid facilitating probe (202), which is depicted as a separate component securely attached to both the fluid supply channel (204) and the fluid source (206). This particular configuration has been designed to offer compatibility with existing fluid delivery systems, encompassing enema bags and various other drug injecting systems, potentially expanding the device's utility and adaptability within the medical field.

[0057] In this embodiment, the fluid facilitating probe (202) is envisioned as an independent component that may be securely fastened to the fluid supply channel (204) and the fluid source (206) through the integration of first securing members (208) and second securing members (210). This thoughtful design choice allows the fluid facilitating probe to seamlessly interface with established fluid delivery systems, enhancing its versatility and making it suitable for integration into healthcare practices where these systems are in use. By facilitating compatibility with pre-existing infrastructure, this embodiment may streamline the adoption of the device, potentially reducing implementation barriers and promoting its wider utilization in various medical settings.

[0058] The first securing members (208) and second securing members (210) serve a pivotal role in potentially facilitating the assembly and attachment of the fluid facilitating probe (202) to both the fluid supply channel (204) and the fluid source (206) within the device. These securing members may encompass various securing mechanisms to ensure a potentially secure and stable

connection between the components, thereby enabling reliable fluid transfer during medical procedures.

[0059] Among the potential securing mechanisms that may be considered are threaded fasteners, which may include screws, bolts, or nuts that may be threaded into corresponding receptacles on the fluid facilitating probe, fluid supply channel, and fluid source. Alternatively, snap-fit connectors, characterized by interlocking tabs and slots, may be employed to potentially ensure a secure yet easily reversible connection, promoting ease of assembly and disassembly.

[0060] Latches and hooks, adhesive bonds using medical-grade adhesives, clamps or clips, bayonet mounts, and even magnetic attachments are all viable options that may be explored based on the specific requirements of the application. These securing members may be chosen in accordance with factors such as the intended use, the need for user-friendliness, potential reusability, and the essentiality of maintaining a secure seal to mitigate the risk of fluid leakage. Ultimately, the device's design may incorporate the most suitable securing mechanism, considering that it potentially ensures the components remain securely attached during fluid administration, while also potentially facilitating ease of maintenance and replacement, should the need arise.

[0061] Referring to Fig. 3, this flow chart outlines a method for facilitating fluid supply through an anal canal using the device. The process may commence with preparation at step (302), where individuals or healthcare providers ensure the cleanliness and functionality of the device while also filling the fluid source with the appropriate fluid, which may include enema fluid, water, medication, gel, or ointment.

[0062] Subsequently, during the insertion step (304), individuals or healthcare professionals may securely operate the pull tab cap by pulling it, causing the folded and corrugated area to expand, thereby enabling the curved tip of the fluid facilitating probe to rotate freely within the cap. At step (306), individuals or healthcare professionals may hold the fluid supply channel using the thumb grip and other finger grip portions. They may gently insert the fluid facilitating probe into the anal canal, utilizing its unique design features, such as the upper curved portion for directing fluid, the middle waist portion for preventing leakage, and the lower curved portion for achieving

a snug fit. The ridges on the lower curved portion may serve as a visual guide for depth control during insertion, proving particularly useful during self-administration. By holding the device just by placing thumb over mentioned place over fluid supply tube, the entire device comes into position whether it is administered by a second person or in the case of self-administration also.

[0063] At step (308), during device insertion, individuals or healthcare providers may utilize the ridges and red color mark both as a visual guide and a sensory indicator at the anal verge. This aids in determining when to halt the insertion process, particularly when patients are self-administering, ensuring they maintain a comfortable position for anal canal access.

[0064] At step (310), the administering phase may involve individuals or healthcare professionals initiating fluid flow from the fluid source by opening the fluid control valve if applicable. Fluid then flows through the fluid supply channel and exits through multiple fluid delivery holes on the fluid facilitating probe, allowing for precise and controlled administration.

[0065] Finally, at step (312), upon administering the desired amount of fluid or completing the medical procedure, the process may conclude with healthcare professionals carefully withdrawing the fluid facilitating probe from the anal canal.

[0066] The operation of the proposed device primarily involves three functional components: the fluid facilitating probe, the fluid supply channel, and the fluid source. The device functions by gravity, allowing fluid to flow from the fluid source through the fluid supply channel and ultimately reaching the fluid facilitating probe, which then discharges the fluid through the anal canal.

[0067] In accordance with the non-limiting exemplary embodiments of the present invention, the device may be constructed from soft polymer or synthetic materials or polyurethane, polyvinyl chloride, silicone, natural polymers, synthetic elastomers, synthetic polymers, biodegradable plastics, and other suitable materials chosen for their biocompatibility and durability. These materials undergo rigorous testing to ensure they meet safety standards for medical devices and are gentle on delicate tissues. Their softness and flexibility enhance patient comfort during use.

[0068] The fluid facilitating probe itself consists of three distinct portions: the upper curved portion, the middle waist portion, and the lower curved portion. The upper curved portion is angled towards the fluid delivery holes, while the middle waist portion is narrowed. The lower curved portion is characterized by its larger diameter D2 and can take on a round, oval, or dumbbell shape, with a diameter D2 greater than that of the upper curved portion and middle waist portion. This lower portion features multiple ridges and color code, providing tactile feedback and serving as a visual guide for insertion. Additionally, the fluid facilitating probe is equipped with fluid delivery holes for gentle and efficient fluid distribution.

[0069] To facilitate ease of use and comfort during insertion and removal, a pull tab cap is affixed to the fluid facilitating probe. This cap contains corrugated baffles that expand when the cap is pulled, allowing for the free rotation of the curved probe within. The upper part of the pull tab cap is closely fitted to the device's tip, enclosing small openings or fenestrations to prevent fluid leakage during use. Moreover, the enclosed region between the pull tab cap and the fluid facilitating probe is filled with a lubricating material or gel or medication, which can serve cost-cutting and topical applications.

[0070] The fluid supply channel comprises a fluid pipe, with its proximal end connected to the fluid delivery holes of the fluid facilitating probe and its distal end connected to the fluid source. Multiple fluid supply holes are present at the distal end of the fluid pipe to enable rapid fluid passage and efficient administration.

[0071] The fluid source consists of a fluid storage volume designed to store various types of fluids, including enema fluid, water, medication, gel, or ointment. Gravity facilitates the flow of stored fluid through multiple fluid supply holes into the fluid pipe. The fluid then travels along the fluid pipe and into the fluid facilitating probe, where it is ultimately discharged through the fluid delivery holes into or around the anal canal. To ensure controlled flow, a fluid control valve may be integrated between the fluid supply channel and the fluid facilitating probe.

[0072] In one embodiment of the device, the fluid facilitating probe, fluid supply channel, and fluid source are configured as integral elements within a single device. Alternatively, in another

exemplary embodiment, the fluid facilitating probe may function as a separate component securely attached to both the fluid supply channel and the fluid source. This configuration allows compatibility with existing fluid delivery systems, such as enema bags and other drug injecting systems, enhancing the device's versatility and usability.

CLAIMS

1. A device for facilitating fluid supply through an anal canal comprising:
   a fluid facilitating probe, a fluid supply channel and a fluid source, wherein the fluid facilitating probe configured to direct fluid into the rectal lumen, the fluid facilitating probe comprising:
      an upper curved portion configured to guide the flow of the fluid;
      a middle waist portion configured to prevent the fluid leakage;
      a lower curved portion configured to snugly fit at an anal verge;
   the fluid supply channel comprising a fluid pipe configured with a proximal end and a distal end, whereby the proximal end of the fluid pipe connected to fluid delivery holes of the fluid facilitating probe, and the distal end of the fluid pipe connected to the fluid source;
   the fluid source comprising a fluid storage volume configured to store the fluid, wherein the fluid source supplies fluid by applying pressure over fluid storage volume or by gravity through one or more fluid supply holes into the fluid pipe of the fluid supply channel, whereby the fluid subsequently traveling along the fluid pipe and into the fluid facilitating probe, and being finally discharged through fluid delivery holes into or around the anal canal.

2. The device of claim 1, wherein the lower curved portion of the fluid facilitating probe is configured with a larger diameter D2 than the upper curved portion and the middle waist portion of the fluid facilitating probe, thereby fitting snugly at the anal verge to prevent the fluid leakage.

3. The device of claim 1, wherein the fluid delivery holes are positioned either at the upper curved portion and/or the middle waist portion of the fluid facilitating probe, thereby enabling effective medication application at the anal canal.
4. The device of claim 1, wherein the lower curved portion of the fluid facilitating probe comprises multiple ridges configured to provide sensory guidance for depth control during insertion.

5. The device of claim 1, wherein the fluid facilitating probe is enclosed by a pull tab cap, the pull tab cap comprises an upper part closely approximated to a tip of the fluid facilitating

probe, wherein the upper part of the pull tab cap has small openings or fenestrations to allow the passage of fluid while applying pressure over the fluid storage volume.

6. The device of claim 5, wherein the area between the fluid facilitating probe and the pull tab cap is filled with a lubricating material or gel or medication.

7. The device of claim 5, wherein the pull tab cap comprises corrugated baffles configured to expand when the cap is pulled, thereby enabling the free rotation of the curved probe within.

8. The device of claims 6 and 7, wherein the corrugated baffles are configured to potentially aid in the even distribution of the lubricating material.

9. The device of claim 1, wherein the fluid supply channel comprises thumb grip and finger grip portions configured to provide secure handling during use of the device and automatically position it correctly for administration by either oneself or by another individual.

10. The device of claim 1, wherein the fluid source comprises an integrated fluid control valve for regulating fluid flow through the device.

11. The device of claim 1, wherein the fluid facilitating probe, the fluid supply channel, and the fluid source are configured as integral elements within a single device.

12. The device of claim 1, wherein the fluid facilitating probe is a separate component securely attached to both the fluid supply channel and the fluid source.

13. The device of claim 1, wherein the fluid facilitating probe is compatible with existing fluid delivery systems, including enema bags and other drug injecting systems.

14. The device of claim 1, wherein the middle waist portion of the fluid facilitating probe is configured with a narrowed profile, facilitating anal sphincter contraction to prevent fluid leakage.

15. The device of claim 1, wherein the middle waist portion of the fluid facilitating probe

comprises fluid delivery holes, whereby, when delivering drug, the fluid delivery holes facilitate drug delivery at the anal canal level, thereby enabling uniform application of medication along the anal canal, which is particularly beneficial for treating anal canal disorders including fissure-in-ano and external hemorrhoids.

16. A method for facilitating fluid supply through an anal canal comprising:

operating a pull tab cap by pulling it, causing the folded and corrugated area of the pull tab cap to expand, enabling the curved tip of the fluid facilitating probe to rotate freely within the cap;

holding the fluid supply channel securely using a thumb grip and other finger grip portions, gently inserting the fluid facilitating probe into the anal canal;

using ridges and red color mark below the ridges acts as a visual guide during administration by a second person and ridges helps as a sensory indicator during self-administration at the anal verge, the patient determines where to stop inserting, particularly ensuring a comfortable position for anal canal access;

Initiating fluid flow from the fluid source by opening the fluid control valve if applicable; and

after administering the desired amount of fluid or completing the medical procedure, carefully withdrawing the fluid facilitating probe from the anal canal.