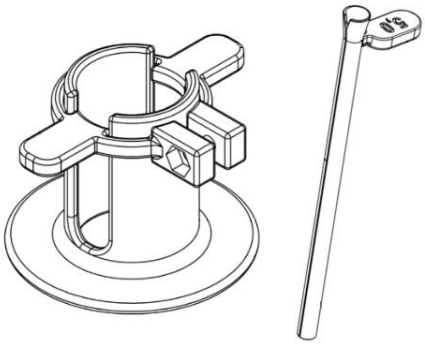
CTBT
Centre for Transfer of Biomedical Technologies

TECHNOLOGY SUMMARY



Dilation System for Drainage

Background

Currently, common solid or flexible dilators or braided stents are used to secure and dilate entrances into body cavities (pleural and abdominal), necrotic and infected cavities in the retroperitoneum or into hollow organs through the body surface. The disadvantage of such procedures is the possibility of damaging surrounding tissues and the risk of deformation of the created channel due to the thick subcutaneous layer and muscle during the insertion of the dilator. With braided stents supplemented with dilation balloons, it is very problematic to achieve an uniformly dilated channel and to remove the braided stent due to possible tissue ingrowth and adhesion of the stent to the surroundings. The disadvantage of braided stents is also their high price.

Description of the Invention

The aim of the invention is to dilate narrow channels that arise after the standard insertion of thin drains into a cavity, hollow organ, or pathological area. The insertion is often done under ultrasound or X-ray control. The newly developed dilatation system is designed to allow the expansion of the channel through which the thin drain is inserted. The uniqueness of the new system lies in the designed dilator set that allows a larger diameter dilator to be inserted into a smaller diameter dilator. This procedure is repeated until a desired width of the channel is achieved. Thus, the channel gradually and gently expands and eventually allows the insertion of thicker drain. The new method of dilation reduces damage to surrounding tissues that might be caused by dilation. The depth of the inserted dilator is determined by a fixation device (fixation ring), which can be used to safely set the depth of the dilated channel.

Advantages and Potential Application

The invention is primarily intended for the insertion of thicker drains in patients with infectious and necrotic deposits in the abdominal cavity, retroperitoneum, or chest cavity. However, it is also suitable for dilating entrances to hollow organs (trachea, stomach, uterus, urinary system). It can also be used during laparoscopic procedures.

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Program Gama 2

Technology Owner

University Hospital Hradec Králové

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IPR Status

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Stage of Development

prototype testing in vivo

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