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Proposed Experimental Model for Qualification of Endoscopic Practices

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Abstract

Background: It is estimated that about 80 million Americans are affected by digestive diseases, and about 30 million endoscopic procedures are performed annually in the US. In Brazil, it was estimated that the national average of endoscopies number was 600 tests / 100,000 inhabitants per year. Despite the common nature of the procedures, there is no standard methodology for the training of endoscopists or when a trainee met important technical competence. In addition, there is no tool that determines the qualification of front trainees to familiarize themselves with the endoscope and endoscopic equipment for clinicalprocedures.

Aim: to validate an experimental model through the use of the upper gastrointestinal tract of swine (pig), shaping it with use of linear staplers, manual anastomoses and mannequins in order to train and improve the technical endoscopic.

Methods:advancement and improvement of endoscopic practices and procedures by new experimental model will help the emergence of a sector of this area facing the resolution of these complications of bariatric surgery.

Results: Endoscopic practices, using the experimental model of the gastrointestinal tract of pigs, were significant to provide better training and capacity building to endoscopy professionals, as demonstrated in the videos. Conclusion: the endoscopies professionals were able to safely simulate the endoscopic procedure in an experimental model, thus ensuring the new technical training.

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Short Communication

It is estimated that about 80 million Americans are affected by digestive diseases, and about 30 million endoscopic procedures are performed annually in the US [1,2]. In Brazil, it was estimated that the national average of endoscopies number was 600 tests / 100,000 inhabitants per year [3-6]. This number compared with the data collected from public health services in England, the Netherlands and Ireland, respectively 1000, 1200 and 1400 by 100,000 / inhabitants / year [6,8].

Thus, it is observed that in Brazil the average number of examinations per year is lower compared to other countries, being necessary to invest in training techniques to facilitate the inclusion of new professionals as well as improving the skills of professionals [6]. Despite the common nature of the procedures, there is no standard methodology for the training of endoscopists or when a trainee met important technical competence. In addition, there is no tool that determines the qualification of front trainees to familiarize themselves with the endoscope and endoscopic equipment for clinical procedures [3,4].

As demand requirement, there is an increasing number of patients undergoing bariatric surgery that is increasingly demanding that professionals know the therapeutic and endoscopic aspects of the main gastroenterological repercussions of bariatric operations [1,2,3]. As a consequence, some of the complications may arise after the completion of this surgery as the emergence of strictures, fistulas, ring migration and regained weight, conditions which until recently were resolved through a new surgical procedures [7,8].

Thus, advancement and improvement of endoscopic practices and procedures help the emergence of a sector of this area facing the resolution of these complications of bariatric surgery. Thus, stenoses of the gastrointestinal anastomoses are corrected through the use of balloon dilator with symptomatic improvement of patients after the [1,2] procedure.

The cases of regained weight, related to dilation of gastrojejunal anastomosis, is a therapeutic option by using argon plasma, causing a fibrotic scar and consequent reduction of the diameter of anastomosis [1,2]. Since migration of the ring in gastric bypass and stenosis , and even fistulae they can be solved by positioning the prosthesis by means of endoscopy [1,3].

Despite the emergence of these new less invasive techniques that require less treatment time, are less expensive and present less risk to the surgical procedure, there are few experimental models that provide the training of professionals in the endoscopists optimized the procedures [2,4,5]. Thus, it aimed to validate an

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experimental model through the use of the upper gastrointestinal tract of swine (pig), as figure 1, shaping it with use of linear staplers, manual anastomoses and mannequins in order to train and improve the technical endoscopic.

Important Statements

The pieces were placed in a modified mannequin model SOBED (Brazilian Society of Digestive Endoscopy) developed by Dr. Ricardo Anuar Dib and Dr. Marco AurélioD'Assunção . In addition, the photos and the training were made in amits-Barretos/SP– Brazil.

Figure 1: Experimental model of the gastrointestinal tract of pig and its modeling for endoscopic training.

Methods

Advancement and improvement of methods and new experimental model of endoscopic procedures will contribute to improving techniques to resolve complications of bariatric surgery through the experimental model which used the upper gastrointestinal tract of pigs, as Figure 1, shaping it using linear staplers, manual anastomoses and mannequins.

Results

Endoscopic practices, using the experimental model of the gastrointestinal tract of pigs, were significant to provide better training and capacity building to endoscopy professionals, as demonstrated in the three videos that are attached.

Conclusion

The endoscopies professionals were able to safely simulate the endoscopic procedure in an experimental model, thus ensuring the new technical training.

Competing Interests

The authors have no competing interests with the work presented in this manuscript.

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References

1. Cambi MP, Marchesini SD, Baretta GA (2015) Post-bariatric surgery weight regain: evaluation of nutritional profile of candidate patients for endoscopic argon plasma coagulation. Arq Bras Cir Dig 28: 40-43.
2. Thompson CC, Jirapinyo P, Kumar N, Ou A, Camacho A, et al. (2014) Development and initial validation of an endoscopic part-task training box. Endoscopy; 46: 735-744.
3. Marchesini SD, Baretta GA, Cambi MP, Marchesini JB (2014) Endoscopic plasma argon coagulation in treatment of weight regain after bariatric surgery: what does the patient think about this? Arq Bras Cir Dig 1: 47-50.

4. Cohen J, Thompson CC (2013) The next generation of endoscopic simulation. Am J Gastroenterol 108: 1036-1039.

5. Cohen J, Bosworth BP, Chak A (2012) Preservation and incorporation of valuable endoscopic innovations (PIVI) on the use of endoscopy simulators for training and assessing skill. Gastrointest Endosc 76: 471-475.

6. Taveira LN, Ricci TC, Queiroz MTA, Zeitune JMR (2011) Endoscopia Digestiva Alta na Rede Pública de Saúde do Brasil - Análise quantitativa por Estados e Regiões do país. GED gastroenterol endosc dig 30: 142-147.

7. Leffler DA, Kheraj R, Garud S, Neeman N, Nathanson LA, et al. (2010) The incidence and cost of unexpected hospital use after scheduled outpatient endoscopy. Arch Intern Med 170: 1752-1757.

8. National Institutes of Health, U.S (2009) Department of Health and Human Services. Opportunities and Challenges in Digestive Diseases Research: Recommendations of the National Commission on Digestive Diseases. NIH Publication No. 08-6514, March.