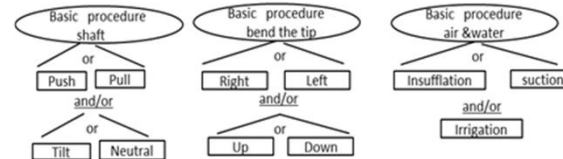


ONTOLOGICAL ANALYSIS OF COLONOSCOPY FOR THE COMPUTERIZED SKILL EVALUATION

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Results ① Ontological description of basic procedure of colonoscopy



The basic techniques used by physicians during colonoscopy (pushing, pulling, tilting, bending, suction, and insufflation) were classified and described using ontological concepts.



Results ③ Ontological description (rectum - descending colon)



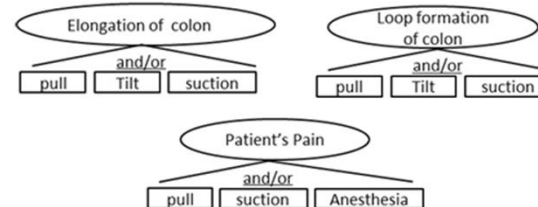
Background and Objective

Ontology is defined as explicit formal specification of terms or concepts in a domain and relations among them in the field of artificial intelligence (AI). The successful introduction of AI to the medical field will require ontological and semantic descriptions of clinical procedures. This study suggests a method of ontological analysis of colonoscopic procedure and technique, and investigates the feasibility of applying an ontological approach to the evaluation of clinical colonoscopy.

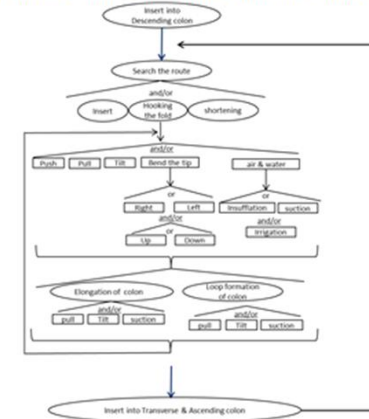
Material and Methods

Procedure and technique of endoscopists during the total colonoscopy were analyzed, and they were ontologically described and investigated.

Results ② Ontological description of search the insertion route and problem solving during the colonoscopy



Results ④ Ontological description (descending colon - ascending colon)



CONCLUSION

Ontological descriptions of colonoscopic procedure and technique are feasible and promising. Ontological descriptions of the procedures of endoscopy can be applied in several areas, such as computerized evaluation and certification of skills, simulator for training, medical alert systems for patient safety and developments of automated endoscope.