

Introduction

Cap-assisted endoscopy has gained popularity as an alternative to the conventional endoscopy techniques of pushing to the stomach or piecemeal removal via the mouth of esophageal foreign bodies. We investigated the effectiveness of cap-assisted endoscopy with conventional endoscopy.

Methods

We reviewed several databases from inception to December 2021 to extract studies that compared the effectiveness of cap-assisted endoscopy to conventional endoscopy for removal of esophageal foreign body. Our outcomes of interest were procedure time, time of foreign body retrieval, technical success of the procedure, adverse event rate, and en bloc removal of foreign body. Analysis was performed by calculating odds ratio or mean difference using the random effects model.

Results

Six studies were included in our meta-analysis (n=1305). Cap-assisted endoscopy demonstrated higher odds of technical success (odds ratio [OR] 3.23; 95% CI: 1.53-6.81; p=0.002), and en bloc removal (OR 26.23; 95% CI: 17.41-39.52; p< 0.01) as compared to conventional techniques. Furthermore, cap-assisted endoscopy showed decreased odds of adverse events (OR 0.22; 95% CI: 0.06-0.81; p=0.02) and mean time of foreign body removal (Mean difference (MD) -11.8 minutes; 95% CI: -18.64 to -4.95; p< 0.01) as compared to conventional techniques.

Discussion

Cap-assisted endoscopy has higher rates of technical success and en bloc removal with reduction in adverse events and time taken for foreign body retrieval as compared to conventional techniques. Cap-assisted endoscopy should be considered as a potential first-line option for impacted esophageal foreign bodies.

Figure 1: Forest plot showing the technical success of cap-assisted endoscopy versus conventional endoscopy for esophageal FB removal.

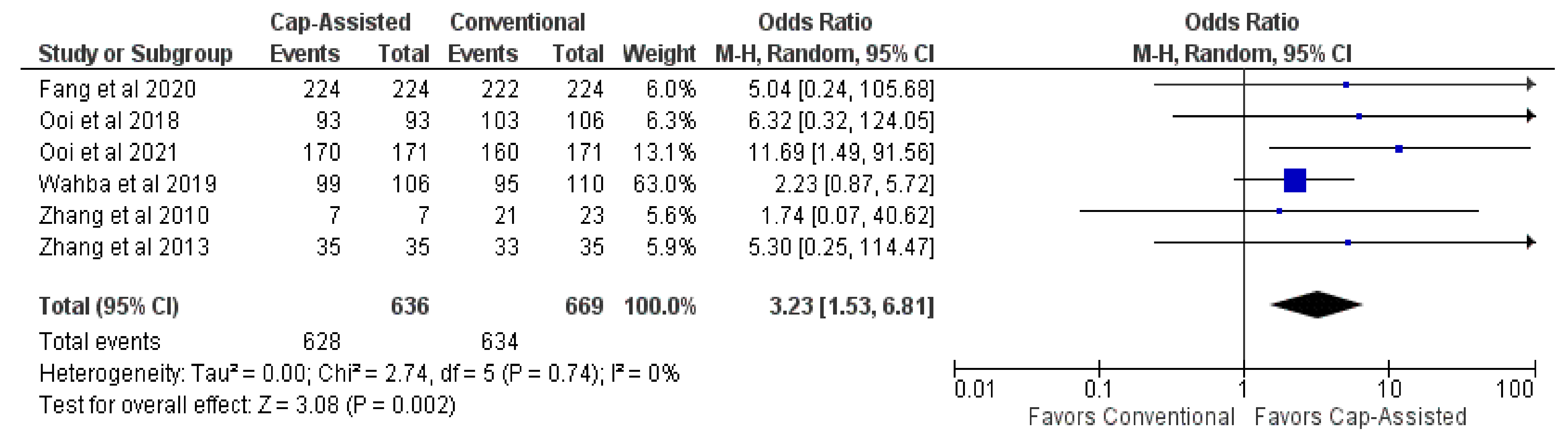
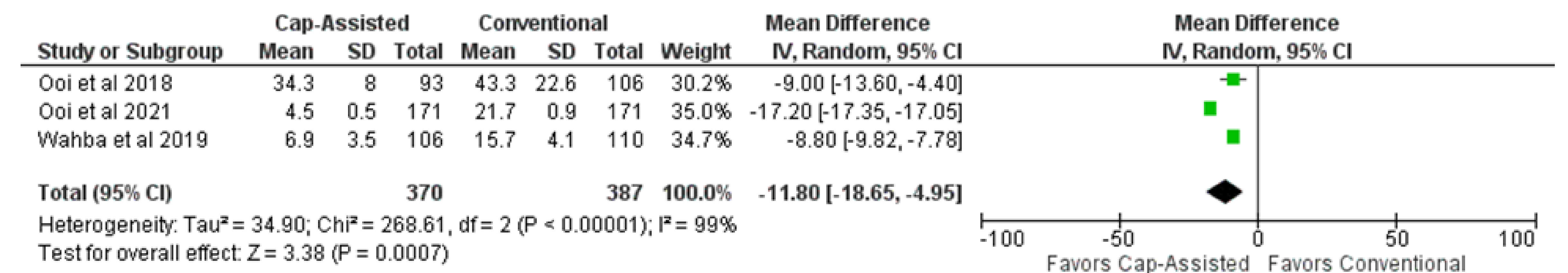


Figure 2: Forest plot showing the foreign body retrieval time of cap-assisted endoscopy versus conventional endoscopy for esophageal foreign body removal.



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