

CYTOSPONGE ; A NEW
DIAGNOSTIC TEST
(BARRETT'S OESOPHAGUS)

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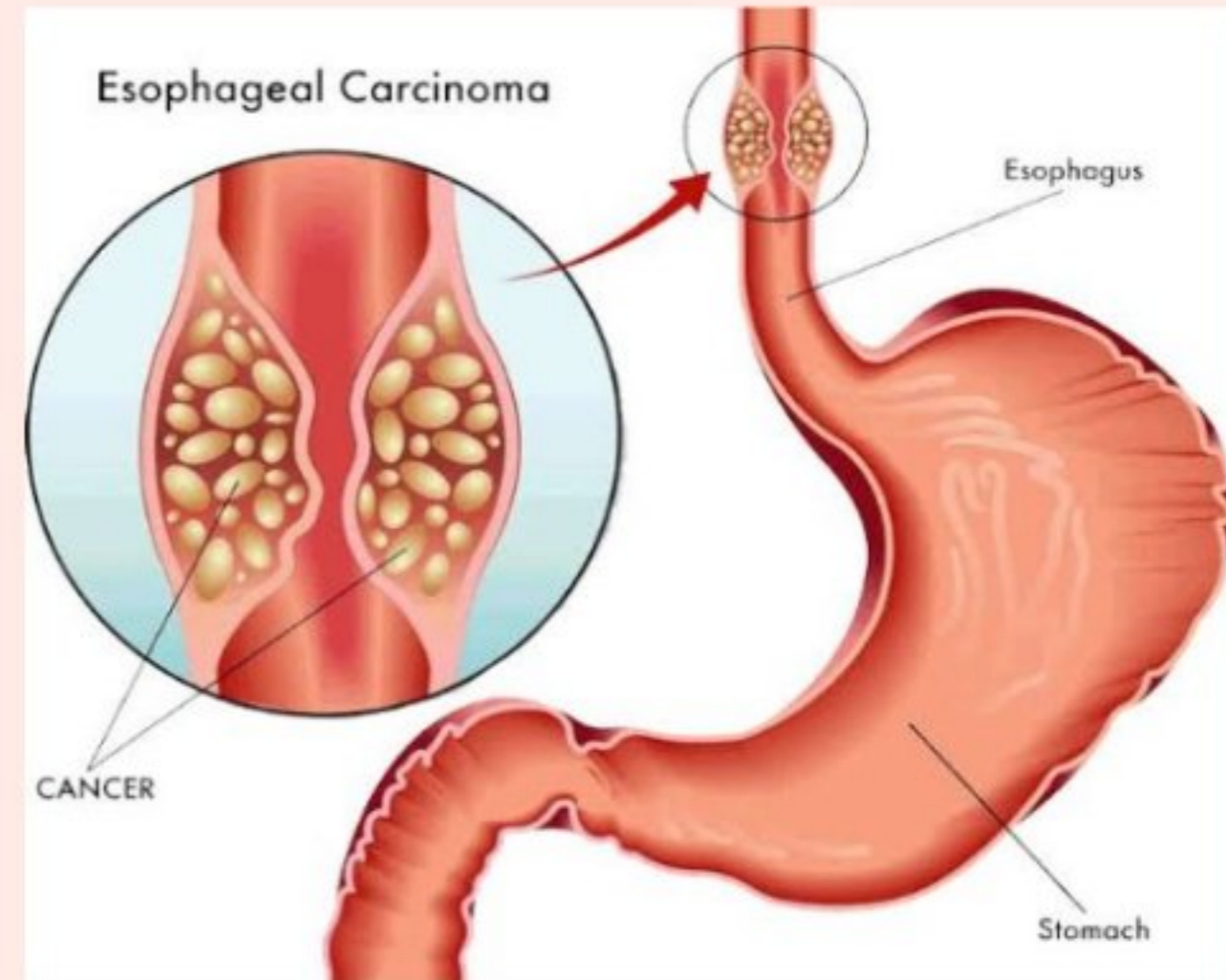
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Aim and Objectives

- To diagnose the Barrett's oesophagus, a precursor to oesophageal adenocarcinoma.
- Cytosponge is a new medical test aim to improve early detection and surveillance of Barrett's oesophagus.

Introduction

- Oesophageal adenocarcinoma (esophageal cancer) is a cancer that occurs in the oesophagus -a long - hallow tube that runs from the throat to the your stomach.
- The majority of oesophageal cancers occurs as either **squamous carcinoma** or **adenocarcinomas**. Adenocarcinoma mainly originates from **Barrett's esophagus**, a precursor of adenocarcinoma, is a complication of chronic **gastrointestinal reflux disease (GERD)**.



- Here in this condition the flat pink lining of the swallowing tube that connects the mouth and the stomach becomes damaged by the **acid reflux**, which causes the lining to thicken and become red.
- Between the oesophagus and the stomach is a critically important valve, the **lower oesophageal spincture**.
- Overtime, the LWS may begin to fail, leading to acid and chemical damage of the oesophagus a condition called GERD.

Gastroesophageal reflux disease



Risk factor's of Barrett's oesophgus :

- **Male gender.**
- **Caucasian etenicity.**
- **Age above 50 years.**
- **Having a family history of Barrett's oesophagus.**

Technology

- The Cytosponge (Medtronic GI Solutions) is a single-use device used to collect cells from the lining of the esophagus.
- It consists of a small mesh sponge, about 30 mm in diameter, contained in a gelatin capsule and attached to a string.
- The patient swallows the capsule with water and the gelatin coating dissolves once the Cytosponge reaches the stomach.



- The patient may be offered a lidocaine throat spray to reduce discomfort. After approximately five minutes, the health care provider uses the string to retrieve the expanded sponge.
- As it is retrieved, the slightly abrasive mesh collects cells along the length of the esophagus.
- The collected cells are analyzed using immunohistochemical staining to detect a biomarker that has been validated as an indicator of BE: Trefoil factor 3 (TFF3)





When you swallow it with water,

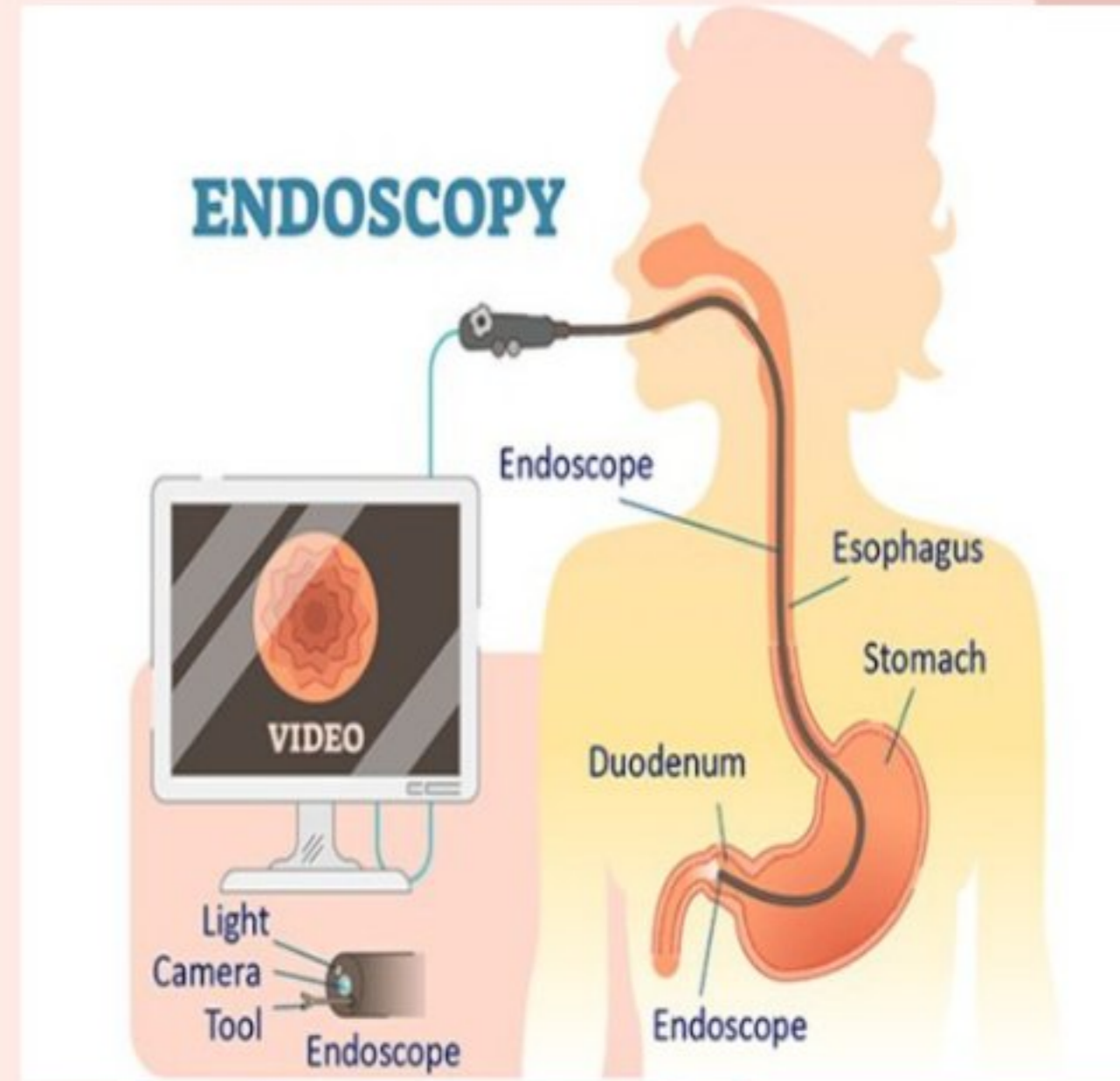
Working of cytosponge in the stomach.

Adverse effects

- **Sore throat is the common side effect after the Cytosponge test.**
- **Detachment is a possible severe adverse effect.**

Comparison to endoscopy

- The Cytosponge test Cannot replace endoscopy but it is preferable physically, practically, and economically.
- Cytosponge is a quicker procedure than endoscopy, could be carried out by the general practitioner, and would not require an anaesthetic.
- The people would be able to resume their everyday activities immediately after the procedure.



Acceptability of Cytosponge

- A study was conducted to qualitatively explore the acceptability of the cytosponge test among members of public who may be at an increased risk for Barrett's oesophagus.
- A recruitment company identified 33 adults (17 men, 16 women) aged 50-60 years with gastro-oesophageal reflux disease (GERD), a risk factor for BE.
- Overall acceptability was high, but there was initial concern about the physical experience of taking the test, including swallowing and extracting the Cytosponge. These worries were reduced after handling the device and a video demonstration of the procedure.
- Participants perceived the Cytosponge to be more comfortable, practical and economical than endoscopy

Conclusion

- Identifying patients with undiagnosed BE may reduce mortality. Investigating all the patients with dyspepsia and GERD using endoscopy would be time and resource intensive.
- Cytosponge test is the most easiest and cost efficient process.
- It can be used as a first-line test to investigate GERD symptoms and detect Barrett's oesophagus.
- By the use this test we can detect oesophagus cancer early and can start medication before it becomes severe.

Reference

- Freeman M, Offman J, Walter FM, et al. Acceptability of the Cytosponge procedure for detecting Barrett's oesophagus: a qualitative study. *BMJ Open* 2017;7: e013901. doi:10.1136/bmjopen-2016-013901.
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- Prepublication history and additional material is available. To view please visit the journal ([http://dx.doi.org/ 10.1136/bmjopen-2016-013901](http://dx.doi.org/10.1136/bmjopen-2016-013901)). R

THANK YOU
