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Pathophysiology of Hiatal Hernia

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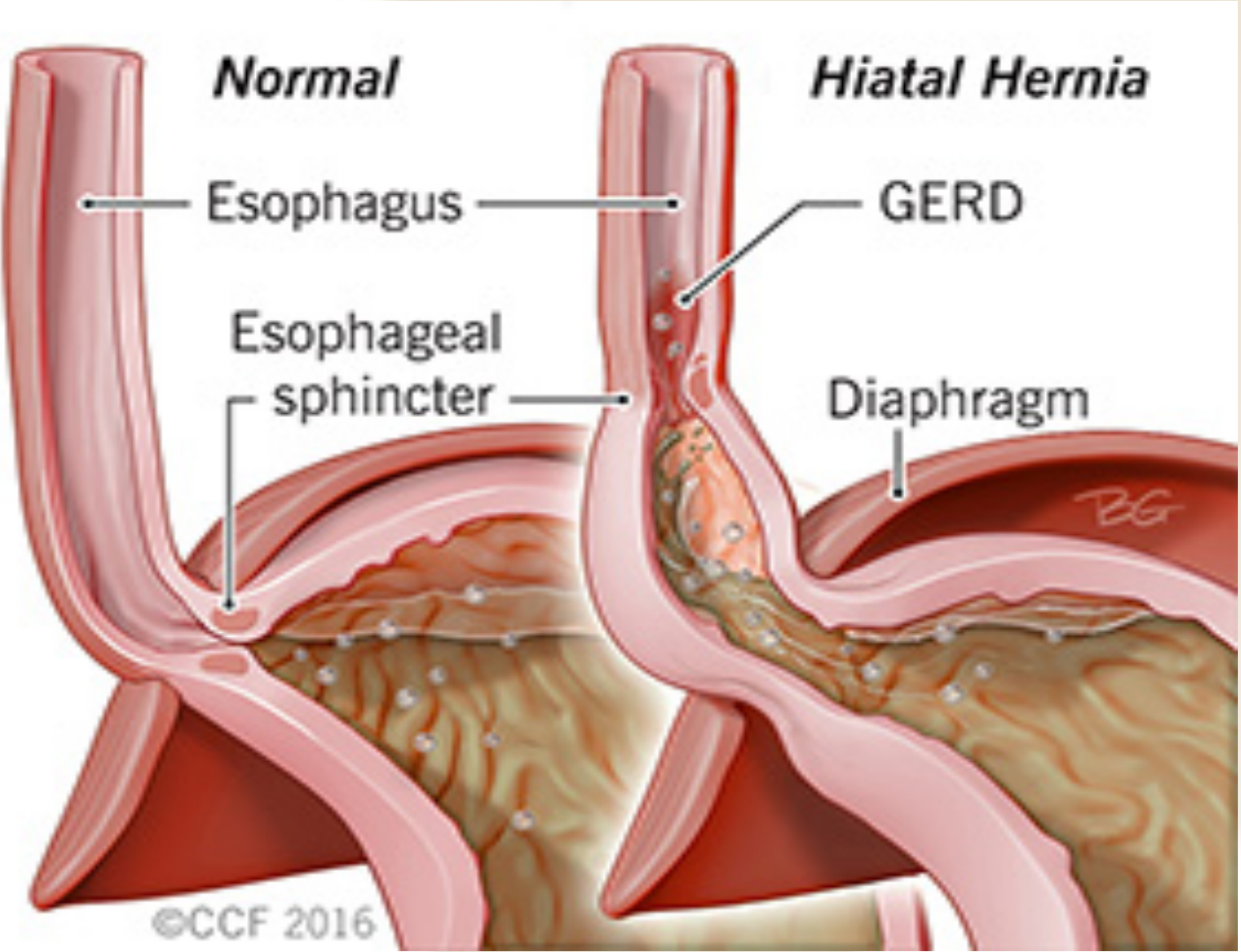
Pathophysiology of Hiatal Hernia

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Introduction

- I was diagnosed with a hiatal hernia from a car accident causing an everyday symptom of gastroesophageal reflux disease (GERD).
- I work in a cancer hospital where many individuals suffer from GERD and in turn some result in Esophageal Cancer.
- Hiatal hernia (HH) is a common disorder affecting 10-50% of the population (Berselli et al., 2015).
- HH is characterized by the upper part of the stomach that pushes through a widening of the diaphragmatic hiatus into the chest cavity (Berselli et al., 2015).
- Normally the esophagus goes through an opening called the hiatus at the diaphragm to the stomach (Cleveland Clinic,2015).



(Cleveland Clinic, 2015).



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UNDERLYING PATHOPHYSIOLOGY

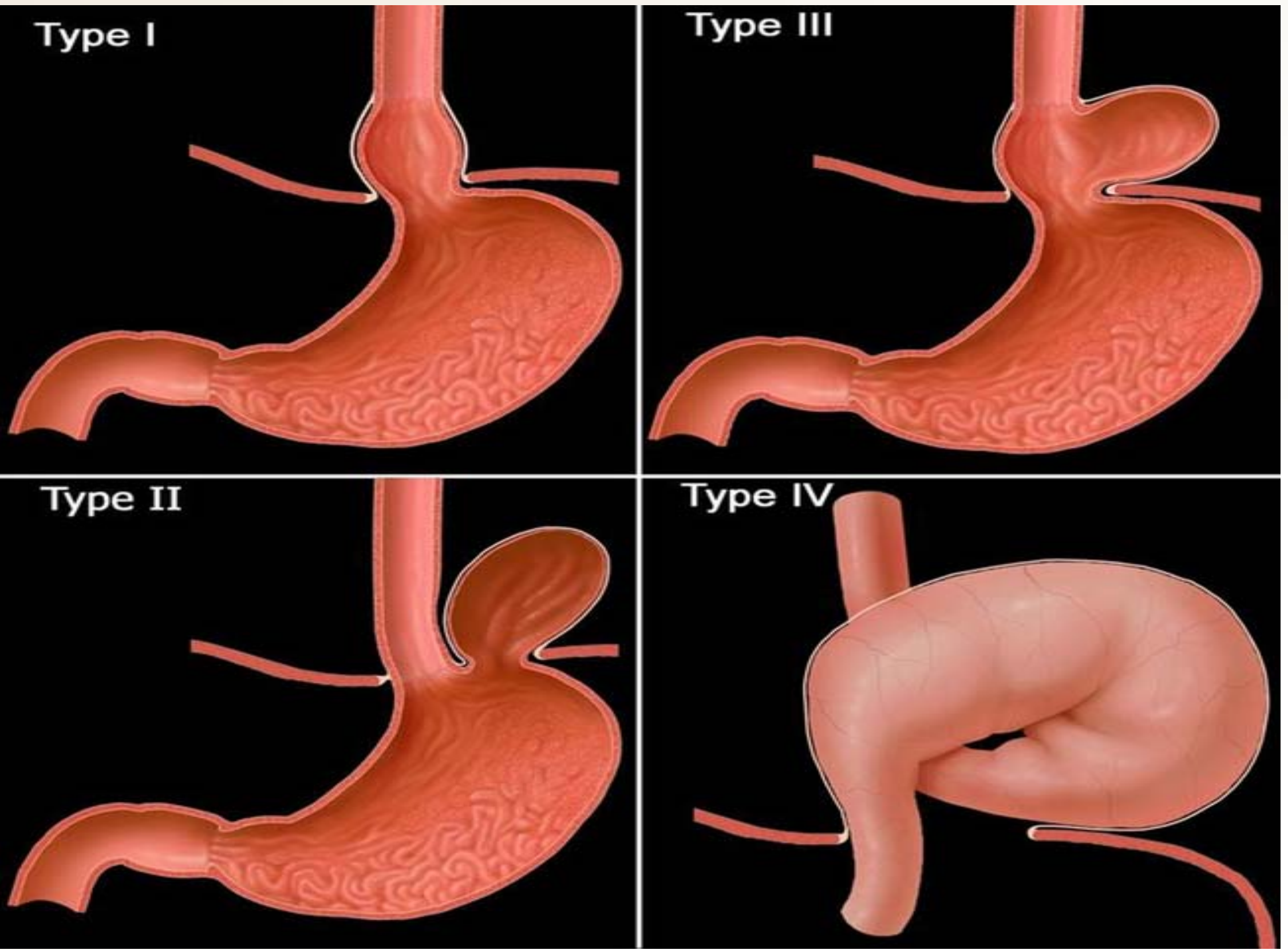
- Increased pressure from the abdominal cavity can cause the herniation of contents from the abdomen to be pushed into the chest cavity. Some of the causes of herniation are:
 - Overweight or Pregnancy
 - Prevalence of HH increases with age and body mass index (BMI) (Roman & Kahrilas, 2014).
 - Vomiting, heavy lifting, physical strain, or straining for a bowel movement (Cleveland Clinic, 2015).
 - A rise in abdominal pressure and a decrease in thoracic pressure, such as obesity and chronic lung disease (Menezes & Herbella, 2017).
 - Caused by injury to the area, which is what happened to me in my car accident.
 - Congenitally (Cleveland Clinic, 2015)

SIGNS AND SYMPTOMS

- Type I is the most common among adults called a sliding HH, which consists of the gastroesophageal junction migrating above the diaphragm while the stomach remains in position.
- Type II is called a pure para-esophageal hernia, where the fundus comes through the diaphragm into the chest cavity while the gastroesophageal junction stays in the abdominal cavity.
- Type III combines type I and II with both the fundus and gastroesophageal junction come into the chest cavity.
- Type IV is often called a giant hernia because other structures in the abdomen beside the stomach can herniate into the chest cavity.
- (Berselli et al., 2015)

SIGNIFICANCE OF PATHOPHYSIOLOGY

- GERD being the main symptom of HH requires us to know the pathophysiology of GERD to know how to manage a HH.
- The lower esophageal sphincter may cause GERD by the muscle losing its tone or the result of a hiatal hernia. When the sphincter allows for gastric acid to reflux up into the esophagus, it may erode the lining of the esophagus (Nwokediuko, 2012).
- Normally you have reflux when the lower esophageal sphincter(LES) relaxes. The normal basal pressure of the LES is 10-45 mmhg (Nwokediuko, 2012). Patients are at risk with pressures of 6mmhg or less (Tatarian, Pucci & Palazzo, 2016).
- Chronic esophageal reflux may cause esophagitis, Barrett’s esophagus, and esophageal adenocarcinoma (Nwokediuko, 2012).



(Federle, 2015).

HH CLASSIFIED INTO 4 TYPES

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- (Berselli et al., 2015)

IMPLICATIONS FOR NURSING

- Patients are diagnosed by endoscopy, barium swallow, esophageal manometry and high-resolution manometry (HRM) post GERD symptoms. Many studies are favoring HRM with ruling out the diagnosis of HH (Khajanchee, Cassera, Swanstrom, & Dunst, 2013).
- HRM is highly sensitive and specific for hiatal hernia detection, exceeding the sensitivity of endoscopy or radiography alone. HRM sensitivity was 92% and the specificity of 95% (Weijenborg, Van Hoeij, Smout, & Bredenoord, 2015).
- Education is key! Management of HH is very similar to GERD management. Some things nurses can teach their patients are:
 - Avoiding certain foods such as coffee, alcohol, chocolate, fatty and acidic meals (Nwokediuko, 2012).
 - Eat meals at least 3-4hrs before lying down
 - Keeping the head of bed higher than 6 inches
 - Avoid tight clothing that can cause increased pressure in the abdomen area
 - Losing weight
 - (Cleveland Clinic, 2015)
- Symptomatic HH should be repaired by a laparoscopic approach (Berselli et al., 2015).
- It is controversial whether to have an open procedure or laparoscopic approach, a study showed the use of an absorbable synthetic mesh with a laparoscopic approach is related to low reoccurrence rates (Berselli et al., 2015).
- Low morbidity and increased patient satisfaction is related to the laparoscopic approach when compared to an open approach (Banki et al., 2016).
- Before surgery is considered doctors look at whether the patient has failed medical management (Tatarian et al., 2016). Medications include antacids, proton pump inhibitors (PPI), and histamine 2 receptor antagonists (H2RA) (Nwokediuko, 2012).
- One study showed that as obesity rates rise, the presence of GERD will also rise (Akst et al., 2017). Those who are obese are two and half times more likely to have GERD symptoms than those who are not obese (Nwokediuko, 2012). For those who are overweight or obese, weight loss alone may reduce symptoms of GERD completely (Singh et al., 2013).

CONCLUSION

Being diagnosed with HH has caused me to grow in the understanding of this condition, and not only help better educate myself, but also be able to better assist those that I encounter that may also suffer from a similar diagnosis.

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