**Spiraling healthcare overuse related to a case of cyclic vomiting syndrome**

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**Story from the Front Lines:**
A woman in her early twenties presented with a long history of intermittent abdominal pain, nausea and vomiting of uncertain etiology. Upon transferring her care to me I was surprised to see that she had four normal CT scans of her abdomen and pelvis in the past two years alone. In addition, she had undergone numerous lab tests as well as colonoscopy and upper endoscopy – all of which were normal. She had tried several medications without much effect on her pain. Notably, she reported using marijuana daily and had been unable or unwilling to modify this despite receiving counseling from her former physician.

Discussing her history further, she relayed that two years ago she had undergone an elective cholecystectomy. In the quest for an explanation for her abdominal pain, she had undergone ultrasound that did not reveal evidence of gallstones or gallbladder wall thickening. A HIDA scan was then performed and despite having a normal gall bladder ejection fraction, her persistent symptoms lead to cholecystectomy. Unfortunately, she experienced a liver laceration during her laparoscopic cholecystectomy – a known risk of the procedure - and bleeding, which lead to a prolonged hospital stay and another operation. The frequency and severity of her symptoms have worsened since this operation. Despite counseling on modifying her daily marijuana use, she has not accepted that this drug, so widely heralded as a treatment for nausea, could be doing anything other than helping her symptoms. She continues to present to emergency rooms for episodes of abdominal pain, nausea and vomiting which often leads to ever more laboratory and imaging studies. Putting it all together, it seems that the most likely diagnosis at hand is a functional abdominal syndrome called cyclic vomiting syndrome – perhaps secondary to chronic marijuana use.¹

**Teachable Moments:**
In patients who present with abdominal pain it is commonplace in the United States to receive an extensive work up including laboratory and radiologic testing. Ultrasounds and CT scans were of no clinical value in a study of the diagnostic approach to childhood abdominal pain, with an average cost of the diagnostic evaluation per child in one study was just over six thousand dollars.² I suspect that due to the frequent emergency room visits and repetitive testing in my patient’s case, the financial burden of her evaluation has been much greater. While my patient’s complication from her cholecystectomy was certainly the exception and not the rule, a large multicenter survey revealed a 0.6% incidence of bile duct injury, a 0.25% incidence of vascular injury and a 0.14% incidence of bowel injury for any patient undergoing laparoscopic cholecystectomy.³ As internists often make the decision of when to refer patients for potential surgical intervention, it is important to remember that this surgery, although commonplace, is not without risks for our patients.
Our prolific use of diagnostic and therapeutic interventions for functional abdominal pain has serious potential costs, financial and otherwise, that are important to consider. At this patient’s young age, her lifetime risk of cancer due to her repeated CT scans is not insignificant. One study estimates that for every four hundred and seventy twenty-year-old women who undergo a CT abdomen-pelvis with contrast, one will develop an associated cancer in her lifetime as a result. According to an online risk calculator from the American Society of Radiologic Technologists, based on the four CT scans this patient has already undergone, she has an additional one percent lifetime risk of developing a related cancer.

It is surprising that despite widespread case reports of improvement and even resolution of abdominal symptoms with cessation of marijuana use, our patient had not yet undergone the most important diagnostic test that she could have - a trial of lifestyle modification. Unlike the repetitive scans, endoscopies, medications, and surgical procedures, this intervention would have been free of risk to the patient. Ultimately, my interactions with this patient have reinforced the importance of cultivating strong therapeutic relationships, particularly those with functional disorders, rather than relying on tests and interventions that may be of limited utility and risk leaving patients in worse health than where they started.

References: