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**Problem Based Learning Discussion**

**PERSISTENT POST SURGICAL PAIN. RISKS AND PREVENTION. EVIDENCE BASED REVIEW**

Chronic pain has tremendous medical, psychological, economic and social impact and burden on patients, providers and society. Surgery can significantly contribute to chronic pain development, but the mechanisms, risk factors and prevention are still poorly understood, not fully incorporated into contemporary clinical practice and clinically underutilized, despite years of research.

**Learner Objective:**

After participating in this activity, the learner will be able to
1) Build a comprehensive understanding of the prevalence, mechanisms, risk factors and development of PPSP
2) Develop patient and surgery specific risk stratification strategies, within perioperative anesthesia and surgical practices, with the goal to reduce the incidence of PPSP
3) Analyze, summarize and apply currently available evidence in regional anesthesia and pain medicine to prevent and minimize PPSP, with emphasis on breast cancer and related surgeries.

The US National Institutes of Health issued a report in 2011 stating that more than 80% of patients suffer postoperative pain, with fewer than 50% receiving adequate pain relief. A recent survey of US adults undergoing surgery also found that 75% of patients with postoperative pain reported moderate to extreme pain during the immediate post-surgical period, with 74% still experiencing these levels of pain after discharge. Post-surgical pain was the most prominent pre-surgical patient concern, and nearly half of the patients reported they had high anxiety levels about pain before surgery. Inadequately managed postoperative pain has multiple significant clinical and non-clinical implications. Severity and duration of acute postoperative pain has been identified as an important risk factor for persistent post-surgical pain.

Current perioperative pain research provides the framework for formulating recommendations to minimize and prevent persistent post surgical pain, especially after the high risk surgical procedures, by identifying the risk factors early, understanding the mechanisms of acute to chronic pain development and utilizing the available multimodal analgesic and other techniques of preventive medicine.
Surgical procedures and patients should be stratified according to these risks, prepared preoperatively for the surgery and post surgical pain and recovery utilizing multimodal and disciplinary approach, when deemed necessary.

**Case description:**

58 year old woman with newly diagnosed breast ductal carcinoma in situ presents to the anesthesia preoperative clinic to be evaluated for right sided total mastectomy and axillary lymph node dissection surgery.

**PMHX:** idiopathic peripheral neuropathy (not currently symptomatic/treated), depression, hypothyroidism  
**PSHX:** Partial thyroidectomy  
No reported anesthesia related complications.  
**ROS:** mild weight loss, insomnia, otherwise, all systems WNL.  
**SHX:** non smoker, occasional ETOH, married, social worker  
**FHx:** breast CA  
**Medications:** Welbutrin, Synthroid, Motrin, Clonazepam  
**ALL:** NKDA  
**Labs:** CBC, Basic metabolic, Coagulation profile: all WNL  
**EKG:** Sinus rhythm at 80, no ST, Tw changes  
**CXray:** WNL

**PE:** 5ft3, 158 lbs  
HR: 81  
BP: 137/86  
99%/RA RR 19  
NAD, appears mildly anxious, AAO x 3  
MP 2, full ROM neck, TMDistance 3 FB  
RRR CTA Bilateral Abd s/nt Ext no edema

Patient says she is very anxious about the upcoming surgery. She is especially worried about the pain and recovery afterwards. She would like to discuss the anesthetic plan and pain management options. Her surgery is taking place in two weeks.

**Questions:**

What is persistent pain after surgery and what is its incidence, particularly pertaining to breast (cancer) surgery?  
Discuss the risk factors associated with persistent post surgical pain (PPSP)?  
What are the proposed mechanisms of PPS pain? How does it develop?  
What is preventive analgesia, pertaining to surgical procedures?  
Discuss the perioperative analgesia plan for the patient described above?  
Would you start any medications or non-medication therapy prior to surgery? How long would you continue?
Would you consider regional anesthesia/analgesia and what are the options for this type of surgery?
What is the evidence for using regional anesthesia and decreasing risk of persistent postsurgical pain?
What would be your anesthetic plan?
When would you start and end your pain management therapies?
What other options would you consider to minimize the postoperative pain and decrease the risk of persistent post surgical pain in this patient?
What is the current evidence on the interventions and therapies to decrease persistent postsurgical pain in breast cancer and other types of surgeries?

References:

Schug SA, Pogatzki-Zahn EM. Chronic Pain after Surgery or Injury. IASP. (2011) Vol 19, Iss 1
Visser EJ. Chronic post-surgical pain: epidemiology and clinical implications for acute pain management. Acute Pain (2006);8:73-81
Schmidt PC et al. Perioperative gabapentinoids: choice of agent, dose, timing, and effects on chronic

Schnabel A, Meyer-Friess CH, Reichl SU, Zahn PK, Pogatzki-Zahn EM.