bioluminescent breast cancer cells. Photothermal ablation was then performed by exposing the 4T1 tumor to 229.3 J/cm² of 800 nm light.

**Results:** Silver nanoparticles can be designed as photothermal agents and they generate significant heating for ablation of breast cancer cells. A lower concentration of the silver nanoparticles was needed to ablate the less aggressive E0771 breast cancer line compared to the 4T1 cell line. Although silver nanoparticles may be beneficial in serving as anti-angiogenic and anti-inflammatory agents, they are not as efficient at generating heat compared to the developed polymer nanoparticles. Toxicity of the silver is also an important variable that can be eliminated by using polymer nanoparticles, which are chemically inert in vivo. The polymer nanoparticles could easily be made fluorescent and localized to breast tumors without the need for a selective targeting agent. NIR stimulation led to selective photothermal ablation of the breast tumors.

**Conclusion:** Metal or polymeric nanoparticles can be developed to serve as photothermal agents for selective ablation of breast tumors. The use of fluorescent polymers aids in detection of the tumors and indicates where NIR light should be applied to induce heat. Polymer nanoparticles have significant advantages over metal-based nanoparticles for more efficient heat generation, thereby reducing the amount of nanoparticles needed for treatment. They are also inert, and not subject to oxidation in vivo like silver nanoparticles. A significant advantage is that polymer nanoparticles can localize to breast tumors without the need of a tumor-guiding molecule, to aid in photothermal ablation of the breast tumors specifically.

**QS18**

**Postoperative Morbidity Following Carpal Tunnel Release Surgery: A NSQIP Analysis**

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**Purpose:** Carpal Tunnel Syndrome (CTS) is common neuropathy among adults with yearly incidence of approximately 900,000 new cases in the United States. We leverage a national surgical outcomes database to evaluate the rate of postoperative infections and identify patient-related risk factors associated with postoperative morbidity.

**Methods:** We performed a 13-year (2005-2017), retrospective cohort analysis of the American College of Surgeon National Quality Improvement Program database. Using International Classification of Disease-9 and-10 Codes along with Current Procedure Terminology Codes, we identified all patients with CTS undergoing open or endoscopic surgery. We reviewed baseline patient demographics, comorbidities, laboratory values, operating specialty, and perioperative variables. Our primary outcome was 30-day postoperative rate of any surgical site complications (SCC) defined by the presence of any superficial, deep or organ space infection along with any episode of wound dehiscence. Secondary outcomes included 30-day rates of any other infectious and noninfectious complications. We performed a univariate analysis and constructed a multivariate logistic regression model to identify all risk factors independently associated with our primary outcome.

**Results:** We identified a total of 1305 patients who underwent CT surgery, 64.7% (N=844) of patients were female, 63.2% (N=825) were Caucasian, 12.2% (159) were African American with an average BMI of 32.3 ± 8.2 kg/m². 78% (N=1018) of repairs were performed by orthopedic surgeons, and 14.1% (N=184) by plastic surgeons. Though not statistically significant the complication rate was highest among plastic surgeons and lowest among general surgeons. Overall SCC was 1.5% (N=21). Rates of other infectious and noninfectious were also low: 0.2% (N=3). Unplanned reoperation rates were 0.5% (N=7). On univariate analysis comorbidities such as diabetes, smoking status, obesity, alcohol consumption was not associated with an increased rate of SCC, however, higher ASA scores, history of severe dyspnea, chronic obstructive pulmonary disease (COPD), and chronic use of systemic or local steroids increased the risk for surgical site infection and wound dehiscence (all P values < 0.05). On multivariate analysis we observed that history of COPD (OR 5.2, 95% CI: 1.6-9.2, P = 0.014) and chronic systemic or local steroid use (OR 5.3, 95% CI: 1.2-8.7, P 0.034) was independently associated with a higher odd of postoperative morbidity.

**Conclusion:** CTS is safe and overall wound complication rates remain low; conventional preoperative risk factors such as smoking, diabetes, increased BMI etc, failed to show an association with postoperative morbidity.