sought to investigate the safety and effectiveness of NBCA in treating these penetrating vessel injuries.

Materials and Methods In a prospectively maintained database, we retrospectively analyzed consecutive patients who presented with a vessel injury caused by a penetrating injury in a large academic Level 1 trauma center between January 1, 2021, and December 31, 2021. We included patients aged ≥ 18 years with any vessel injury in the intracranial or extracranial circulation. The primary endpoint was success of NBCA by absence of vessel perforation and bleeding after embolization via angiogram. The secondary endpoint was recurrence of bleeding via computed tomography (CT) angiogram imaging.

Results A total of 10 patients required endovascular embolization of penetrating vessel injury via NBCA. All patients suffered penetrating vessel injury by a bullet wound. The vessels subject to injury included common carotid artery, internal carotid artery, external carotid artery, vertebral arteries and inferior thyroid arteries. All patients were successfully treated with NBCA with absence of bleeding detected on angiogram. There was no recurrence of bleeding via vessel imaging.

Conclusion To the best of our knowledge, this is the first study demonstrating the safety and effectiveness of NBCA in penetrating vessel injuries. Further research, including observational and randomized trials, is needed to investigate the safety and efficacy in this population.


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SINGLE CENTER EXPERIENCE OF TREATING HOSPITALIZED PATIENTS WITH MULTIPLE MYELOMA AND THORACOLUMBAR LESIONS WITH COMBINED TUMOR ABLATION AND VERTEBRAL AUGMENTATION


Background/Purpose Chemotherapy, radiation therapy, and opioid analgesia has been the mainstay of treatment for patients with MM and painful bony lesions, with more recent studies and subsequent guidelines supporting early intervention with vertebral augmentation (VA) in select patient groups. While VA addresses the mechanical component of painful fractures/unstable lesions, the addition of heat-based ablative therapy is theorized to decrease pain via local destruction of pain-sensitive nerves, and amelioration of local production of cytokines and growth factors from the tumor. Very limited studies are available describing the combined use of VA with heat-based ablation (HBA). As such, the purpose of our study is to report technical and clinical outcomes of combined VA and HBA performed in hospitalized patients with MM.

Methods Retrospective review of all combined VA and HBA treatments performed in hospitalized patients between October 2007 and October 2021 was conducted. Baseline information including age, gender, indication for VA, prior therapy, and procedural information including location of lesions, number of treated lesions, and approach were recorded. Technical success was defined as ability to complete VA and HBA without peri-procedural complication. Clinical outcomes were assessed based on patient reported pain scores on an 11 point scale (0 indicating no pain, 10 indicating worst pain), by comparing highest pre-procedural pain score to last recorded pain score prior to discharge. Additional data including time between pre-procedural MRI and intervention, hospital length of stay, and post-discharge ECOG score were also recorded.

Results Fifty-nine hospitalized patients underwent combined VA and HBA, of which 11 patients (5 female) with mean age 67.7 ± 8.8 years, had a diagnosis of MM; five of which were newly diagnosed. Indication for treatment with VA for 9 patients was painful compression fracture, and 2 due to risk of impending catastrophic fracture secondary to bony destruction. Thirteen total lesions (7 thoracic, 6 lumbar) were treated. For VA, two patients (both with a single thoracic lesion) were treated with titanium implants, and the remainder of the lesions were treated with cement augmentation. Interventions were performed 6.3±4.0 days following pre-procedural MRI. A unipedicular approach was used for 4 patients (6 lesions), and bipedicular approach for 7 patients. Technical success was 100% with one case of leakage noted at the T5 level, with post-procedural chest CT confirming minimal embolization of cement, and the patient remained without deficits or procedure related complication. There was a statistically significant change in worst pre-operative pain score (8.3 ±1.9) compared to last pain score prior to discharge (2.1 ±2.9); non-parametric paired test p=0.001. The median length of stay was 18 days with interquartile range from 12.5–19.5 days. Post-discharge ECOG scores were available for 9 of 11 patients (5 patients ECOG-1; 2 patients ECOG-2; 2 patients ECOG-3).

Conclusion Combined VA and HBA demonstrated 100% technical success without major adverse event in the treatment of 13 thoracolumbar lesions. Additionally, patients experienced a significant decrease in reported pain prior to discharge. Future prospective studies are warranted to assess added benefit of HBA to VA.


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TIMING SURGERY AND HEMORRHAGIC COMPLICATIONS IN ENDOCARDITIS WITH CONCOMITANT CEREBRAL COMPLICATIONS

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Background To date, limited studies have been conducted regarding the safe timing of valvular repair for infectious endocarditis (IE) in patients with radiographic findings consistent with embolic stroke or infectious intracranial aneurysm (IIA).

Methods A single-center, retrospective review of valvular surgeries for IE was performed (2011–2019). Outcomes for patients who underwent cranial image screening and those who did not were subsequently compared.

Results 276 patients underwent valvular repair for IE; 186 (67.4%) were male. The mean age was 51.0 (17.4) years. Mean time from imaging to surgery was 7.5 days. 124 (44.9%) underwent baseline cranial imaging. Of these, 22 (17.7%) had findings concerning for ischemic stroke from embolic origin. 65 patients underwent baseline diagnostic cerebral angiography. 10 (15%) of these patients harbored an IIA. Four out of these 10 (40%) underwent intervention for an
Gaze Weakness Neglect and Speech (GWNS): An Acute Ischemic Stroke Scale of Large Vessel Occlusion (LVO) in the Emergency Department for Faster Treatment

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Methods: An Institutional review board’s permission was obtained and patient enrollment began in January 2020 and still enrolling. From the database, consecutive patients from January 2020 to September 2021 were selected. In GWNS scale, each receives 1 if positive and 0 if negative and scale ranges from 0 to 10. G represents either gage deviation or gage preference, W represents presence of any weakness, N represents presence of any neglect/disregards and S any speech impairment as aphasia or dysarthria. GWNS scale was utilized by fellowship trainee stroke and neuroendovascular specialist during triage in ER. In addition to GWNS and NIHSS, patients’ demographics including CTA/cerebral angiographic data were collected. Data was analyzed by a biostatistician to determine the association of GWNS scale score and LVO.

Results: 109 patients (52% women) with age 70.32 ± 15.0 years. Treatment strategies included: 53.8% venous stenting, 27.7% venous embolization, and 52.0% procedures. There were 2.3% of transient ischemic attacks and an associated AVF in 13.3% of patients. No intraprocedure complications were reported. There were 2.3% of transitory peri-procedural complications. No permanent morbidity or mortality was observed.

Current Management of Pulsatile Tinnitus with Venous Causes: A Large Case Series with Mid- and Long-Term Outcomes

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Introduction: Pulsatile Tinnitus (PT) is a disabling condition that can be caused by vascular anomalies. The treatment of the underlying vascular conditions may improve the PT, restoring the quality of life of many patients.

Purpose: We aimed to investigate all vascular anomalies responsible for PT and their treatments, to assess the postoperative efficacy and the complication rate of endovascular treatments, as well as the influencing factors for recurrence.

Materials and Methods: We reviewed all patients treated for PT in our institution between January 2020 and December 2021. We reviewed all clinical and imaging data, pre- and post-procedure, and patient outcomes to explore treatment efficacy and peri-operative morbimortality.

Results: We included 114 patients in this study. All patients had undergone venous endovascular interventions for PT, 77% were women and 23% were men, with an average age of 52.0 ± 15.0 years. Treatment strategies included: 53.8% venous sinuses stenting (75% unilateral and 25% bilateral), 30.8% collateral venous occlusion by coiling (75% with the use of liquid embolic agent and 25% without additional agents), and 7.8% in combination. The causes of PT included: intracranial stenosis in 63.3% (84.2% stenosis alone and 15.8% associated with prominent emissary veins), a high riding jugular bulb in 10% (33.3% isolated and 66.7% associated with diverticulum), prominent emissary veins in 13.3%, and an associated AVF in 13.3% of patients. No intraprocedural complications were reported. There were 2.3% of transitory peri-procedural complications. No permanent morbidity or mortality was observed.