

disease as HTN, we believe that an improvement in the elaboration of aortic hypertensive complications in the future guidelines about HTN will help better prevention.

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Penile fracture: Surgical vs. conservative treatment



Penile fracture is a relatively uncommon form of urologic trauma, and is defined as blunt direct trauma to the fully erect or semi-erect penis resulting in rupture of the tunica albuginea of the corpora cavernosa [1, 2]. Due to a sudden increase in the intracorporeal pressure, over-stretching of the tunica albuginea occurs, causing rupture. Involvement of or injury to the corpus spongiosum, urethra, dorsal nerve and vessels may also be present [3]. Patients typically present with symptoms including sharp penile pain, hearing a 'cracking' sound, rapid detumescence and swelling with or without ecchymosis of the penile shaft [4]. The penis also may be bent or angled toward the side contrary the injury, and ecchymosis may extend in to the scrotum and perineum, as well as the suprapubic and inguinal regions [4]. Treatments of penile fracture have ranged from conservative, including compression bandages, anti-inflammatory agents, and ice, to the more invasive and complicated surgical repair, and all involve a risk of complications [5]. Currently, immediate surgery for a fracture is recommended, and has been shown to be superior to non-operative treatment, however if it is an uncomplicated case without extensive hematoma or concomitant urethral injury, conservative therapy has been shown to yield equally good outcomes [6]. The purpose of this study was to review the injury patterns and treatment of penile fracture in a cohort of patients who presented to the emergency department (ED).

We conducted a retrospective cohort analysis of males presenting to the EDs of seven affiliated hospitals in West Michigan with a diagnosis of penile fracture. All eligible cases were seen between January 2005 and July 2017 (150 months). Patient demographics, presenting complaints, co-morbidities, radiographic studies, treatment in the ED, final disposition, and complications were recorded using a standardized abstraction forms. Operative notes were reviewed to define the extent of penile injuries, and time and type of definitive treatment. Descriptive statistics including frequency tables and confidence intervals were used to summarize the data.

During the study period, 32 patients presented to the ED with a penile fracture. Average age was 37.2 ± 12.1 years with a range of 14 to 59 years. Average duration of symptoms was 21.7 ± 33.9 h; range 1 to 120 h. Mechanism of injury included sexual maneuvers (66%), masturbation (13%), manipulation of erect penis (9%), rolling over (6%), and fall onto erect penis (6%). Characteristically, patients heard a cracking sound associated with sharp pain followed by immediate loss of the erection, deformity, discoloration and swelling of the soft tissues. The penis often took on a bizarre shape, with deviation of the penile shaft, usually to the side opposite the tear. The penis may be bent (88%) as well as have ecchymosis confined to Buck's fascia, resulting in massive edema as seen in 15 patients (46%). Additionally, injured fascial compartments lead to an extension of the ecchymosis into the scrotum, perineum, the suprapubic area and the inguinal regions. The ED diagnosis of penile fracture was made clinically in all cases, without the need for



ancillary diagnostic tools. Blood was present at the meatus in three patients; urethrography demonstrated a urethral wall tear in five men (16%). Four patients with minimal symptoms had an ultrasound which showed a small tear in the tunica albuginea.

Overall 14/32 patients (44%) were treated conservatively, with outpatient follow-up. Indications for outpatient management included long duration of symptoms, minimal pain/swelling, ability to urinate, and small tears seen on ultrasound. Outpatient treatment included compression bandages and consistent cooling, combined with anti-inflammatory, antibiotic and analgesic therapy. Five patients treated conservatively subsequently returned to the hospital for surgical repair. A total of 18/32 (56%) underwent immediate surgical repair of the penile trauma and no short-term complications were noted. Defects in the tunica albuginea were repaired with sutures and the hematoma was evacuated.

While it is a rare occurrence, the diagnosis of penile fracture can generally be made clinically and does not require further investigation when the patient presents with typical onset and characteristic physical findings, including swelling and ecchymosis of the penis with a deviation toward the side opposite the injury. However, not all patients have a typical history. Ultrasound and retrograde urethrograms, especially in an atypical case, should be performed to rule out other injury and to help determine appropriate surgical treatment. The management of penile rupture includes both conservative treatment and early surgical repair, when indicated, to avoid complications such as persistent clot, angulation, penile abscess and fibrosis. We did not encounter any major complications in either the conservative or surgical treatment groups in our study, however five patients treated conservatively did require subsequent surgery to repair damaged tissue.

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Early diagnosis of atrial fibrillation using a E-health application

Cardiac events occur relatively commonly in patients with acute community-acquired pneumonia [1]. In the elderly, the pneumonia might cause a heart failure and might be a trigger for atrial fibrillation (AF) [2]. When patients without vital distress are treated in hospital, they are admitted to a medical unit without continuous monitoring. In our Emergency Department (ED), patients requiring oxygen for pneumonia without vital distress are hospitalized in our medical unit. In this unit, clinical monitoring of patients by the nurse is performed manually with a maximum frequency of three or four times per day. In addition to this monitoring, these patients are real-time monitored, using Sensium® technology (Fig. 1A and B). This wearable and wireless Patch measures heart rate (HR), respiratory rate (RR) and axillary temperature, and provides updated data every 2 min [3]. The Emergency physician is notified by E-mail and iPhone® (Apple) application of abnormal changes in patients' vital signs suggestive of patient deterioration (Fig. 1C and D). This application allowed early diagnosis of AF and intervention before the condition worsened in a 82-year-old Caucasian female. She had a past history of idiopathic paroxysmic AF, treated with Bisoprolol 5 mg per day and Apixaban 2.5 mg twice per day. Clinical examination of this admitted patient to our ED revealed a 40.2 °C (104.4°F) temperature, tachypnea with respiratory rate (RR) = 23 bpm, heart rate (HR) = 90 bpm, blood pressure 127/79 mm Hg. A bacterial right lower lobe pneumonia was diagnosed. She was treated with systemic amoxicillin 1000 mg, three times per day. Pulse oximetry indicated an oxygen saturation levels between 90 and 92% SpO₂. Arterial blood gas study found SaO₂ 91%, pO₂ 7.9 kPa, pCO₂ 4.4 kPa, pH 7.38. After initiation of oxygen therapy (2 l/min), RR was 18 bpm and SpO₂ was 97%. We real-time monitored the patient in our medical unit for acute respiratory failure requiring oxygen, using Sensium® technology (Fig. 2) and the nurse checked vital signs manually every 8 h. During the night shift we received an alert by E-mail indicating a sudden increase of HR from 85 bpm to 141 bpm, on the 24 October 2017 at 05:30 pm (Fig. 3). Clinical examination found an acute cardiogenic pulmonary edema with abnormal left ventricular systolic function and arrhythmia. Vital parameters were RR = 32 bpm, SpO₂ 92%, and blood pressure was 155/84 mm Hg. Electrocardiogram found an AF. Treatment consisted of increasing oxygen therapy 4 l/min, and to add systemic high-dose boluses of isosorbide dinitrate (2 mg three times) and furosemide 1 mg/kg [4]. No specific treatment of AF was given in this context of pneumonia. We received an alarm until 25 October 2017 at 04:56 am, and then we observed a decrease in HR (97 bpm). A second electrocardiogram found at this time a sinus rhythm. The patient had a temperature of 36.7 °C (98.1°F) and a RR of 24 bpm. During the AF phase, HR was 143 ± 7 bpm. During the sinus rhythm phase, HR was 82 ± 1 bpm. Blood culture revealed *Streptococcus Pneumoniae*. Treatment improved clinical conditions and amended the respiratory failure in three days of treatment.

Community acquired pneumonia substantially increases the risk of heart failure across the age whether patients are treated in hospital or as outpatients, suggesting to assess downstream episodes of dyspnoea [5]. Usually, patients without vital distress are not monitored in an intensive or critical care unit after their visit in ED. However, these patients and especially the elderly can experience cardiac deterioration. If they are unable to call for help, they find themselves in life-threatening distress until the nurse arrives for scheduled surveillance. This situation can be life-threatening. The present case aimed to demonstrate how E-health might be helpful to early diagnose these situations. In the present case, the Sensium system was helpful to hypothesise the presence of AF in a context of pneumonia and to rapidly diagnose a cardiogenic pulmonary edema. The rapid treatment may have allowed the