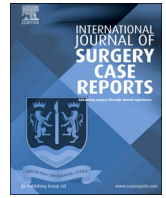




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Takotsubo cardiomyopathy in an 81-year-old woman after injection of bone cement during hemiarthroplasty: An orthogeriatric case report



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ABSTRACT

INTRODUCTION: Takotsubo cardiomyopathy is a syndrome characterized by transient cardiac ischemia-like symptoms, such as chest pain, increase of myocardial necrosis markers, electrocardiographic changes, and temporary left ventricular apical ballooning without significant coronary artery disease, often triggered by a particularly stressful situation. The association between Takotsubo and hip fracture surgery has been rarely reported in the literature.

PRESENTATION OF CASE: An 81-year-old woman was hospitalized with a diagnosis of right femoral neck fracture. During the surgical procedure, she displayed acute coronary symptoms a few minutes after the injection of bone cement, in the absence of coronary lesions. Due to the time relationship, bone cement implantation syndrome – not uncommon to observe – was considered in the differential diagnosis. However, the instrumental findings and the transient nature of the abnormalities guided us toward a diagnosis of Takotsubo. The treatment with Levosimendan, Amiodarone, and Metoprolol allowed gradual and satisfactory recovery of the cardiac function within a few days. The follow-up performed two and six months after surgery revealed complete cardiac recovery, and ability to walk at home comparable to the pre-fracture situation.

DISCUSSION: Takotsubo cardiomyopathy is more common in women during the postmenopausal phase, especially if undergoing stressful physical or emotional stimuli. In this case, the sequence of hip fracture, pain, hospitalization, and surgery could easily be intended as a strong stressful event with high physical/psychological burden.

CONCLUSION: Despite the good prognosis associated with early recognition, Takotsubo represents a life-threatening adverse event. Considering its possible pathogenesis, a “gentle care” approach and the optimization of pain control must be pursued in elderly subjects with hip fracture, aiming at reducing the stress of the hospitalization and related procedures.

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1. Introduction

Takotsubo [1] cardiomyopathy, or “transient apical ballooning syndrome”, is a non-ischemic cardiomyopathy that mimics the onset of an acute myocardial infarction. Its incidence was recently reported to be 1.7–2.2% among patients presenting with acute coronary syndrome [2]. Takotsubo is also called “broken heart syndrome” because a strong emotional psychological stress may act as a potential trigger. Originally described in Japan in 1990, its eponym

was coined using the two Japanese terms *tako* (octopus) and *tsubo* (pot), due to the resemblance between the cardiac apical ballooning (hallmark of the syndrome) and the octopus trap (a kind of ceramic pot) used by Japanese fishermen [3].

The acute functional and instrumental abnormalities accompanying Takotsubo cardiomyopathy occur in the absence of significant coronary alterations, and could be completely recovered within a few weeks up to two months [4]. If promptly recognized and correctly managed, despite the severity of its onset and the potentially life-threatening characteristics (those of a cardiogenic shock), this syndrome normally presents a good prognosis with low morbidity and in-hospital mortality rates [2,5,6]. This paper reports a rare case of association between Takotsubo and hip fracture surgery, which has been described only by two previous studies [7,8]. The present case has been reported in line with the CARE guidelines [9].

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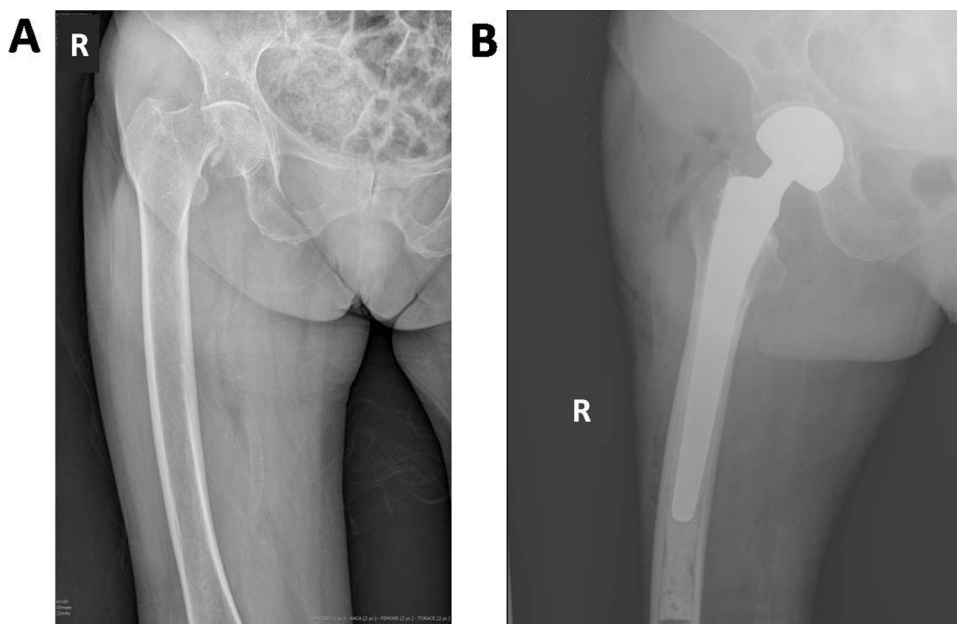


Fig. 1. Plain X-ray of the right hip (antero-posterior view) showing femoral neck fracture before (A) and after (B) the surgical procedure.

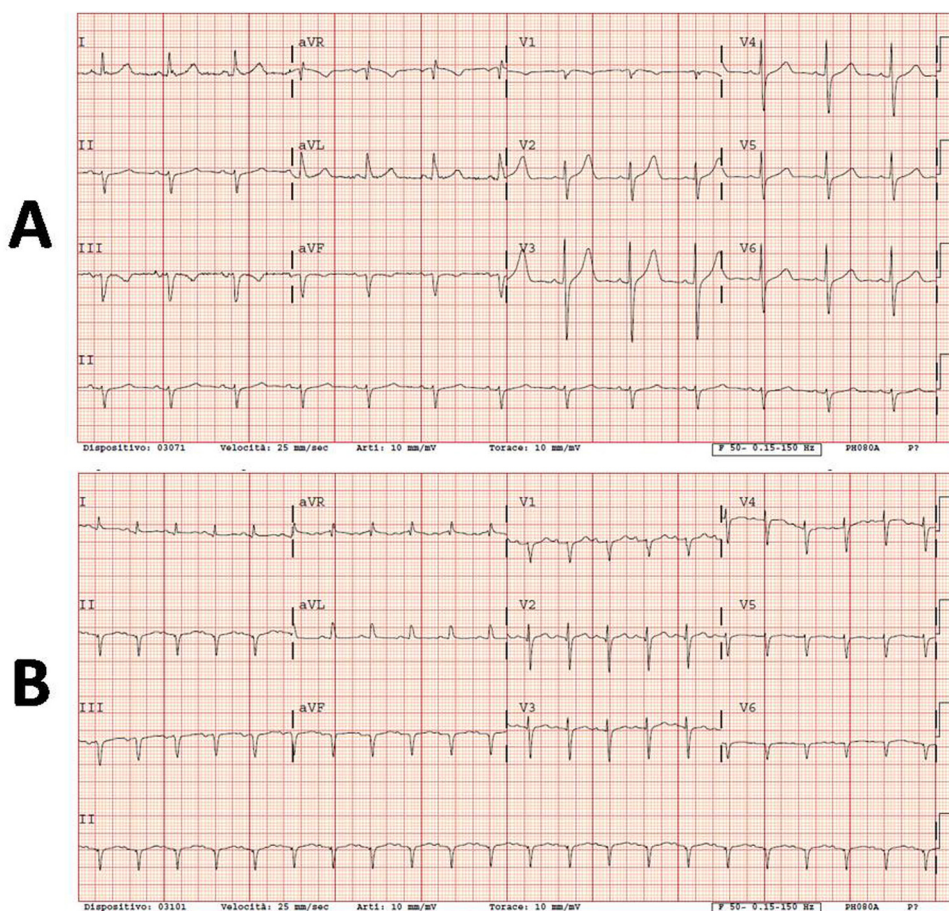


Fig. 2. Electrocardiograms of the patient performed on admission (A), and after resuscitation post-Takotsubo (B). After the event (B), the electrocardiographic tracing evidenced signs of myocardial infarction in the inferior leads.

2. Presentation of case

The female patient we describe, an 81-year-old Caucasian woman living at home with a son, was completely independent

in Katz’s basic activities of daily living (ADL [10]=6/6) and Lawton’s instrumental activities of daily living scales (IADL [11]= 8/8) before the hospitalization. Her clinical history evidenced osteoporosis with multiple previous vertebral incomplete collapses, in

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