fore, we excluded all patients with eGFR < 60 mL/min/1.73 m^2. In addition, the risk of CIN was assessed using the Mehran risk score, which was moderate. Unfortunately, the baseline patient characteristics in our study were relatively preserved in terms of renal functions, and as the number of patients with hyperuricemia was relatively limited (only six patients), we did not perform subgroup analysis for patients with hyperuricemia in terms of CIN. Moreover, in our study population, there were no patients with hypoalbuminemia. Hence, the impact of these risk factors on CIN mentioned by the readers need to be confirmed in further clinical trials aiming for this purpose.

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An unusual complication during reimplantation of implantable cardioverter defibrillator (ICD) after ICD leads extraction: Distal migration of anchoring sleeve

To the Editor,

In the last decade, the use of pacemakers and implantable cardioverter defibrillators (ICDs) has increased. Consequently, the number of device- or procedure-related events requiring system removal, such as lead failure or infection, has also increased. In the literature, procedure-related complications involving loss, unsuccessful, or incomplete removal of intravascular objects have been described (1-3). However, loss of the anchoring sleeve during pacemaker implantation is extremely rare. In this paper, we report our experience of distal migration of the anchoring sleeve during ICD implantations after lead extraction procedure.

A 72-year-old man with ischemic cardiomyopathy and a left ventricular ejection fraction as low as 25% was followed up for many years. He received a dual-chamber ICD for primary prophylaxis 6 years ago. He presented with elective replacement interval and lead failure due to retraction of the atrial and ventricular lead of his ICD. The passive fixation atrial and ventricular leads were planned to be removed and single-chamber ICD implantation was planned. The lead extraction was performed in the supine position under local anesthesia and light sedation with fluoroscopy guidance via the left subclavian vein. The next generation in mechanical lead extraction TightRail™ Spectranetics system with firm steady traction the leads could be mobilized from the right atrium/right ventricular (RV) apex and removed. After the leads were removed, subclavian venous access was protected and bleeding was controlled. Then single-chamber ICD leads were inserted through the vascular sheath. Following placement of the RV lead, we realized that the anchoring sleeve in the RV lead had slid to the tip of the distal coil. Because of the risk of embolism, a new anchoring sleeve was positioned close to the lead connector and sutures were made at the site of introduction into the vein. The pulse generator was then connected to the electrode and secured in the pocket. Implantation was completed after the incisions were closed in layers. During the follow-up 1 year after the procedure, the sleeve was in the same position and the patient's clinical course was uneventful. To the best of our knowledge, this is the first case in which a distal migration of the anchoring sleeve occurred and had a permanent stable position without any complications.

Anchoring sleeves, which are composed of silicone rubber, secure the lead from moving and protect the lead insulation and conductors from damage caused by tight sutures at the site of introduction into the vein. Embolism and migration of lead fragments are well-known complications of lead extraction procedures, occurring in 0.1%–0.2% of these procedures (1, 4). However, the loss of the anchoring sleeve during pacemaker implantation is extremely rare. Mutual interference manipulations and maneuvers of leads may cause the distal migration the anchoring sleeve into the subclavian vein. Moreover, in our case, the especially large subclavian vein entrance because of lead extraction may have caused the problem. During pacemaker implantation, the operator should ensure that the anchoring sleeve is positioned close to the lead connector pin to prevent the inadvertent passage of the sleeve into the vein. However there is no data on the migration of the sleeve of the endocardial leads. Anchoring sleeves and outer insulation coating of endocardial leads are similar because both are composed of silicone rubber. Therefore, if the sleeve is stable and the risk of embolism is low, no problem may occur.

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Ten years' clinical experience of cardiac myxoma: diagnosis, treatment, and clinical outcomes

To the Editor,

Cardiac myxoma (CM) is the most common type of benign primary cardiac tumor (1). Approximately more than half of primary cardiac tumors are myxomas (2). They are most commonly diagnosed between the age of 30 and 60 years (3). CM is described as a sporadic or familiar disorder in the literature (2, 3). A limited number of patients have been referred with the classical triad of obstructive cardiac symptoms: pulmonary edema, progressive heart failure (HF), and arterial embolic events. Rarely, syncope/vertigo or sudden death can be the first symptom of CM. For early diagnosis, transthoracic echocardiography (TTE) is being increasingly used. Recently, magnetic resonance imaging (MRI) and/or thoracic computed tomography (CT) have been used for prompt diagnosis. Early and optimal surgical excisions have shown excellent early- and long-term results, with no recurrence of the tumor (4). According to previous studies, CMs may be diagnosed sporadically in 90% of patients (5).

In contrast to solid myxoma, papillary myxoma is characterized by a soft formation that is friable during tumor excision. Therefore, the rate of tumor recurrence is high in patients with papillary myxoma than in those with solid myxoma (4).

We treated 38 patients with CMs between June 2006 and September 2016 and retrospectively analyzed the symptoms, diagnostic methods, and treatment strategies. Briefly, the mean age of the patients who underwent primary myxoma resection was 41.7±7.8 years, and female/male ratio was 22/16. Two patients with CM were in the pediatric age group (13 and 17 years). We used two-dimensional TTE for the diagnosis of CM in all patients. If tumors other than myxomas were suspected, thoracic CT or MRI was used.

No mortality occurred in the early postoperative period. Three patients required an emergent operation because of HF. In the early postoperative period, we detected a low cardiac output syndrome, new onset of atrial fibrillation, and mediastinal bleeding in 12 patients. Mean ICU and length of hospital stay was 2.7±1.4 and 8.5±3.3 days, respectively. Two patients died at a mean follow-up of 32±13 months postoperatively. Among the 36 long-term survivors, 76% of patients were in NYHA class I, whereas 24% were in NYHA class II. Two patients who underwent left atrial myxoma resection showed a recurrence 33 and 46 months after the first surgery. Congestive HF resulting from obstructive cardiac manifestations was detected in seven patients.

CM can present with a wide range of symptomatic spectrum from being asymptomatic to having serious side effects (4, 5). Our patients with a large solid myxoma that were localized in the left atrium had a greater incidence of HF and obstructive symptoms. In accordance with our experiences, serious proteinuria or acute renal failure which may be the first sign of right atrial myxoma. Peripheral or cerebral artery embolic events are the main catastrophic symptoms related to tumor type and location. After diagnosis is confirmed, early tumor excision should be performed. Surgery has excellent overall survival and freedom from reoperation, but follow-up using TTE is recommended.

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