motility as per protocol, that 9% of these patients had asymptomatic gastroparesis 24 hours after the procedure. In a subsequent analysis, only the onset of phrenic nerve paralysis during the procedure was associated with a higher risk of gastroparesis, although this was transient. A more recent observational study prospectively compared the frequency of onset of gastroparesis among 104 patients undergoing PV cryoablation or radiofrequency.[5] Six cases were detected in the cryoablation group (5% of the sample). Only one case was detected in the radiofrequency group. The patients who received cryoablation and developed gastroparesis had smaller atria (36 ± 2 mm) and lower mean temperatures were achieved (–51 ± 2.3 °C). All these patients received medical treatment and none of them had residual symptoms at 6 months, with the exception of the patient with gastroparesis following radiofrequency.

We describe a complication of PV ablation that is not often associated with a history of PV cryoablation, particularly in cases of late onset and generally with good prognosis. Possible risk factors associated with cryoablation in our patient are low temperature, multiple applications, and the use of a large balloon in a small atrium. Ablation of the right lower PV was particularly complex, as it required 2 balloon sizes, and its anatomical relationship with the esophagus is unknown, as no imaging test was performed in advance, which could have been useful. Fluoroscopic observation of the stomach and distended intestinal loops is useful for the initial diagnosis. Confirmatory diagnosis could be obtained by means of gastric emptying scintigraphy in severe and/or uncertain cases, although this technique is generally unnecessary. Initial treatment is conservative with antisecretory drugs and prokinetics, and endoscopic treatment is reserved for more severe cases.

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Successful Extracorporeal Membrane Oxygenation in a Patient With Fulminant Lupus Myocarditis

Oxigenador extracorpóreo de membrana eficaz en una paciente con miocarditis lúpica fulminante

To the Editor,

Fulminant lupus myocarditis (LM) is an uncommon heart manifestation of systemic lupus erythematosus (SLE).[1] Although extracorporeal membrane oxygenation (ECMO) is a standard therapy for patients with cardiogenic shock, its use in the context of SLE is anecdotal.[2] We describe an SLE patient with fulminant LM requiring ECMO.

A 26-year-old Filipino woman with a history of SLE was admitted to our center in January 2015 with fever and dyspnea. SLE had been diagnosed 4 years previously based on perimyocarditis, serositis, leucopenia, Raynaud's phenomenon, hypocomplementemia, and positive antinuclear, anti-Sm, and anti-RNP antibodies. She was treated with hydroxychloroquine and pulses of methylprednisolone and cyclophosphamide and received azathioprine as maintenance treatment. She showed a good clinical response and remained in remission for the next 4 years.

At the current admission, the patient reported a 6-day history of fever and worsening dyspnea. Six months previously, she had abandoned treatment. Physical examination revealed increased heart (110 bpm) and respiratory (26 pm) rates and unremarkable breath and heart sounds. Laboratory tests found a high erythrocyte sedimentation rate (60 mm/h; normal value, < 20) and normal creatinine kinase but elevated troponin I (0.103 mg/L; normal value, < 0.05). Electrocardiogram showed sinus tachycardia, with no ST-segment changes, and transthoracic echocardiography found no dilated chambers and normal valve function and left ventricular ejection fraction (LVEF; 55%).

Treatment with prednisone (30 mg/d) and meropenem was instituted, but the patient continued to have recurrent fever and a tendency to hypotension. Blood tests showed elevated troponin I (1 ng/dL) and pancytopenia (leucocytes, 2.3×10^9/L; hemoglobin, 6.7 g/dL; platelet count, 75×10^9/L). A second echocardiogram showed biventricular global dysfunction (LVEF, 35%). Microbiological tests for bacteria, fungi, viruses, and mycobacteria were all negative. Subsequent investigations revealed a positive antinuclear titer (> 1:640), negative anti-DNA and antiphospholipid antibodies, and normal complement levels. Despite dobutamine infusion, diuretics, intravenous pulses of methylprednisolone (1 g/d for 5 days) followed by prednisone (60 mg/d), an intravenous pulse of cyclophosphamide (1 g), and empiric broad-spectrum antibiotics (piperacillin/tazobactam and daptomycin), the patient developed respiratory distress with shock. Repeat echocardiography showed ventricular deterioration (LVEF, 20%) with a restrictive transmitral flow pattern, moderate mitral insufficiency, mild tricuspid insufficiency with mildly elevated pulmonary artery pressure, and a cardiac index of 2.0 L/m^2. Due to the clinical suspicion of recurrent acute LM, propensity for reversibility with immunosuppression, and given the life-threatening situation, ECMO was instituted and rituximab (2 doses of 1 g fortnightly) was added to the medical therapy.

After ECMO implementation and following high-intensity immunosuppression therapy, the patient showed progressive clinical improvement with hemodynamic stability. After a

week, she was completely weaned from dobutamine and the ECMO was discontinued, with full recovery of ventricular function (LVEF, 50%). The patient was discharged with no signs of ECMO complications and was treated with hydroxychloroquine (200 mg/d) and prednisone (15 mg/d) as maintenance therapy. After 1-year follow-up, the patient remains asymptomatic.

LM is a rare manifestation of SLE with a prevalence ranging from 5% to 10%.[1] Clinical features include fever and congestive heart failure.[1] Fulminant LM presenting as cardiogenic shock was described in only 10% of the largest reported series on LM.[3]

In daily clinical practice, LM diagnosis represents a major challenge and is based on high clinical suspicion supported by elevated cardiac biomarkers and echocardiographic evidence of impaired LVEF. Endomyocardial biopsy is the gold standard, but the invasiveness of the procedure and its poor negative predictive value limit its use.[4] Cardiac magnetic resonance is a promising technique but further studies are needed to support its usefulness in SLE patients.

Up to 70% of patients with LM have good prognosis with recovery of cardiac function within days or weeks. However, in the acute phase, 4%-10% of patients die of fulminant myocarditis with cardiogenic shock refractory to medical therapy due to severely reduced ventricular contractility or malignant arrhythmias. In these patients, mechanical circulatory support devices such as ECMO may play a major role as bridging therapy to keep the patient alive and allow time for the potential recovery of the myocardium in response to immunosuppressive treatment.[5]

ECMO has a notable value in fulminant myocarditis compared with left ventricular assist devices. When this severe clinical situation is associated with ventricular arrhythmias, left ventricular assist devices are unlikely to provide sufficient cardiac output when the right ventricle is not pumping effectively, whereas ECMO bypasses biventricular failure.

In the case of fulminant myocarditis where recovery of cardiac function is expected if the patient survives the acute phase of the disease, such as in the case of LM, data from a recent meta-analysis suggest a favorable short- and long-term survival, with more than two-thirds of patients requiring ECMO surviving to hospital discharge.[6]

Treatment of LM is based on high doses of glucocorticoids combined with immunosuppressant agents such as intravenous cyclophosphamide. Anecdotal reports describe good outcomes with intravenous immunoglobulin and plasma exchange and rituximab should be considered in refractory patients.[1]

Hence, we describe an SLE patient with fulminant LM, an uncommon but severe cardiac manifestation. The present case highlights the value of bridging therapy with ECMO and the usefulness of ECMO in boosting the long-term outcomes of severe SLE patients.

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Severe Cardiac Complications of *Shabu* Use: An Emerging Drug in Europe

Complicaciones cardiacas graves por shabu: *una droga emergente en Europa*

To the Editor,

There are 3 forms of methamphetamine—speed, base, and ice—differing in their purity (ice is 80% pure, whereas speed is 10%-20% pure). Ice is also called *crystal* and is known by *shabu* in the Philippines. It is the free base form of methamphetamine,[1] and its most frequent form of consumption is by smoking. *Shabu* is an emerging drug in Europe with increasing consumption reports, especially in Southeast Asian communities. The 2016 World Drug Report noted an upward trend in the number of seizures of methamphetamine since 2002, reaching a peak of 108 tons in 2014.[2]

Cardiovascular complications due to cardiac toxicity are the second most common cause of death in methamphetamine abusers; associated cardiovascular pathologies include malignant hypertension, aortic dissection, myocardial infarction, pulmonary hypertension, malignant arrhythmias due to prolonged QT,[3] and cardiomyopathy.[4,5]

We conducted a prospective study of *Shabu* consumers who were admitted for cardiac complications in our hospital. From January 2015 to June 2016, 5 patients were identified. Consumption was recognized by anamnesis (2 patients) or positive urinalysis (3 patients). Urinalysis was performed by immunoassay and the results were confirmed by gas chromatography-mass spectrometry. *Shabu* can be detected within a 60-hour window. In