[MUSIC PLAYING]

GIUSEPPE LANZINO: Dural fistulas are uncommon lesions, but it is very important for physicians to be aware of these possibilities because, quite often, patients can present with symptoms that might mimic more common conditions and may be misdiagnosed for a long period of time unless the possibility of a dural fistula is entertained early on in the course.

A dural AV fistula is an abnormal communication between an artery and a vein, and they can occur both in the brain or in and around the spinal cord. The most common type of fistula is the so-called transverse sigmoid sinus fistula, and these patients often present with a bruit. Typically, if there is a fistula, a bruit can be also heard with a stethoscope, right in the mastoid area. And that's a fairly reliable sign.

There are other fistulas located in the region of the cavernous sinus. They can present with ocular symptoms, paralysis of eye movement, decreased vision, redness of the eye and the conjunctiva. It's very common for those type of fistulas.

Fistulas can cause seizures, can cause headaches, symptoms that are not specific or even picture like dementia like type of presentation. The most severe type of presentation is related to hemorrhage, secondary to rupture of some of these abnormal vessels. And some patients present with decreased level of consciousness related to the hemorrhage.

Usually, patients have an MRI first, and that also is done to rule out other more common problems. The MR angiography is often done in combination with an MRI of the brain, but it's is not uncommon that, even in the current day of advanced imaging, the final correct diagnosis is made after a catheter angiography.

Treatment of a dural fistula is highly individualized and is related to patient symptoms and location of the fistula and appearance of the fistula on angiography. Geography. Nowadays, the vast majority of fistulas are treated with minimally invasive treatments, primarily embolization. And for some of the transverse sigmoid sinus fistulas, we also used a lot stereotactic radio surgery with the gamma knife, which is, in combination with embolization, very effective in curing the fistulas.

The embolization is used as an adjunct to decrease the blood flow, which improves the patient's symptoms while we wait for the gamma knife to work, because gamma knife does take some interval of time between the treatment and the actual closure of the fistula. And also, we think that combination of embolization with the gamma knife with these specific type of fistula might improve the ability of the gamma knife to close the fistula completely.

The key with the embolization is to reach, with a very small catheter, the most distal portion, where there is the actual communication between the arteries and veins. And with modern embolic agents, we are able to immobilize and to close effectively a large number of fistulas that before, usually, could be treated only with complete surgery.

Surgery is still a very important therapy for some of these fistulas that are not amenable or don't respond to less invasive treatments. And after embolization, patients are discharged, either the same day of the embolization or the following day, depending on the complexity of the fistulas and the type of embolic agent used. After gamma knife treatment, patients are usually discharged the same day of their treatment.

Because these are not common lesions, only few centers are able to assemble the team that are required for the treatment. And also, the few centers see a large number of patients considering the rarity of that disease. I think it's very important that patients are evaluated and treated in those centers where the expertise and organization is available to provide the best possible care.

It is important to think about the possibility of a fistula when faced with the patient that symptoms are getting worse and they cannot otherwise be explained with any other more common problem. The vast majority of fistulas can be treated with very low risk to the patient. And in our experience, the risk of major complications is less than 2%. Early diagnosis and treatment often results in excellent eventual outcomes.