CHIVA AND TYPE 3 SHUNT

CONCEPTS

Type 3 Shunt

The veno-venous shunt is a venous flow derivation in the opposite direction to physiological. They can be open or closed and be activated in systole or diastole.
The shunt type 3 is the most common, with 60% of total veno-venous shunt. Is a closed one, activated in diastole. It is characterized by a escape point of the deep venous system to the saphenous vein (N1-N2). There is an interposition of a saphenous's collateral (N3 or N4) between this vein and the point of reentry.

Cure CHIVA

It was designed by Dr. Franceschi in 1988. Consist in the hemodynamic treatment of superficial venous insufficiency. Its strategy is based on 4 points:
1. Fragmentation of the pressure column.
2. Interruption of veno-venous shunts.
3. Preservation of reentry perforators.
4. Suppression of undrained tertiary or quaternary network.
Due to its characteristics, the treatment of shunt type 3 is the more problematic.

Cure CHIVA Modalities

CHIVA 1. Application the principles of the CHIVA strategy at a single time, ensuring the drainage of the saphenous vein.
CHIVA 2. Application the principles of the CHIVA strategy in 2 possible times. As a first step is acted in the escape point N2-N3. If it develops a perforating distal of drainage in the saphenous, would be done a second time to stop the escape point N1-N2.
CHIVA 1+2. Application the principles of the CHIVA strategy at a single time leaving a undrained system on the saphenous.

CHIVA IN TYPE 3 SHUNT

The type 3 shunt can be treated with the 3 modes of CHIVA:

CHIVA 1

Elective treatment:

1. When the escape point N1-N2 is not the arch of the saphenous. For example, the Hunter perforator.
2. When a straight longitudinal N 4 retrograde serves as the internal saphena, from which emerges the visible N3.
3. When there is a perforator in the proximal part of the N3, in these cases may disrupt the single perforator N3 leaving the internal saphena drained on it.
4. When there is a longitudinal N4 between which the saphenous vein has a caliber greater than 3 mm, and is developed a perforator of the saphenous, it is possible devalvulate the saphenous segment remaining between the N4, establishing a direct inflow on this perforator.

Suboptimal treatment:

In the remaining cases of type 3 shunt the implementation of CHIVA 1 strategy produces a

satisfactory effect on the subjective clinical venous insufficiency reducing the size of varices. However, the aesthetic result is often unsatisfactory.

May be indicated:

1. In patients with very dilated saphenous (> 9 mm) at risk of symptomatic thrombosis of saphenous vein.
2. When the aesthetic result is not a priority.

CHIVA 2

Elective treatment:

Designed for the treatment of shunt type 3 in the internal saphena. After the first time, causes a forward flow in the internal saphena typically not durable unless the caliber is less than 6 mm. and N3 is in the upper third or middle thigh. In the remaining cases usually antegrade flow becomes retrograde, either to a saphenous perforator, in which case the staff will need to close the sapheno-femoral junction, or to a neo N3. which must be closed.

CHIVA 2 can not be applied in saphenous >9 mm (at the risk of saphenous vein thrombosis with open sapheno-femoral junction) nor in cases where the saphenous vein is atrophic distal to N3 or N4.

CHIVA 2 should not be done if it is not possible to perform a clinical and hemodynamic control after a CHIVA 2 first time.

CHIVA 1 +2

Considered by many as not true CHIVA, but as conservative hemodynamic treatment of venous insufficiency. It involves the closure of the escape point N2-N3 and the sapheno-femoral junction in the same surgical time, leaving a non-drained system.

Elective treatment:

1. In the type 3 shunt of the external saphenous. Hemodynamics of the external saphenous makes perforator drainage are activated early on that vein.
2. In cases of type 3 shunt of the internal saphena with atrophic saphenous distal to N3 or N4 on which must act. When the N3 or N4 emerges in the proximal or middle thigh can be obtained good results. When this emergence is more distal results are often unsatisfactory.

Suboptimal treatment:

1. In all cases of type 3 shunt which results clinical and hemodynamic of the first time of the CHIVA 2 can not be controlled.

The CHIVA 1+2 is contraindicated in saphenous more than 9 mm in diameter by the risk of symptomatic phlebitis of the vein.