Liver Shunts (Portosystemic Shunts) in pets

What is a Liver Shunt?

A liver shunt (portosystemic shunt) is a condition where abnormal blood vessels allow blood to bypass the liver or portions of the liver. They can be called intrahepatic (inside the liver) or extrahepatic (when the abnormal vessel(s) bypass the liver. This prevents the liver from filtering out toxins properly, which can affect various organs, especially the brain. Liver shunts can be congenital (present from birth) or acquired (develop over time due to liver disease). Most cases in dogs are congenital.

Why is the Liver Important?

The liver is vital for filtering harmful substances out of the blood, producing important proteins, and helping with digestion. Normally, blood from the intestines flows through the liver before it returns to the heart. A liver shunt allows this blood to bypass the liver, which means harmful substances can stay in the blood and cause health problems.

Breeds Affected

Liver shunts are more common in small breeds like Yorkshire Terriers, Maltese, and Miniature Schnauzers. In cats, it's more common in Domestic Shorthairs and Persians.

Signs of a Liver Shunt

- Behavioural changes (lethargy, confusion, head pressing)
- Seizures (more common in cats)
- Vomiting and diarrhoea
- Stunted growth (poor weight gain)
- Excessive drooling (especially in cats)
- Urinary problems (frequent urination, urinary stones)

Treatment Options

- Medical Management

In some cases, liver shunts can be managed with medications and a low-protein diet. This helps reduce the production of toxins and manages symptoms like seizures and vomiting. Lactulose and antibiotics are often used to reduce toxin levels in the blood.

- Surgery

For most pets, surgery is the best option, especially for extrahepatic shunts. The goal is to close the abnormal blood vessel slowly over time, which allows the liver to adjust. Techniques like ameroid constrictors or cellophane bands are used to gradually close the shunt.

- Interventional procedures : coil placement can be considered for intrahepatic shunts

Post-Surgery Care

After surgery, pets will need close monitoring and follow-up tests to ensure the liver is functioning properly. It may take several months for the liver to fully adapt, and medications are often continued during this time. A low-protein diet is still recommended for a few months post-surgery.

Post-Surgery Complications

Most pets recover well after surgery, but complications can happen, such as:

- Seizures: Some pets may have seizures after surgery due to changes in brain chemistry. Seizures are more common in cats, and early treatment with anticonvulsants may be needed.
- Low Blood Sugar: Small breed dogs may experience low blood sugar (hypoglycaemia) after surgery. Feeding frequent small meals can help prevent this.
- Bleeding: Rarely, pets may experience bleeding after surgery. Your vet will monitor this closely.

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Diagnosis

Liver shunts are diagnosed through a combination of blood tests, bile acid tests, and imaging (like ultrasound or CT scans). Blood tests can show liver enzyme changes and abnormal bile acids. Imaging helps identify abnormal blood vessels.

Prognosis

The long-term outcome for pets with liver shunts depends on the severity and how early the condition is treated. Pets who undergo successful surgery often lead normal, healthy lives, though they may need ongoing management with a special diet and medications.

Caring for a Pet After Surgery

After liver shunt surgery, your pet will need extra care at home. Here's what you can expect:

- Diet: Continue feeding a low-protein diet for at least a few months after surgery. Your vet will guide you on when or if you can return to a normal diet.
- Medications: Your pet may still need medications like lactulose or antibiotics to help manage liver function. Your vet will advise on when these can be stopped.
- Activity: Keep your pet calm and restrict activity for the first few weeks after surgery to allow healing. Short, controlled walks are fine but avoid vigorous play or exercise.
- Monitoring: Watch for any signs of concern, such as lethargy, vomiting, or seizures. If you notice these signs, contact your vet right away.

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