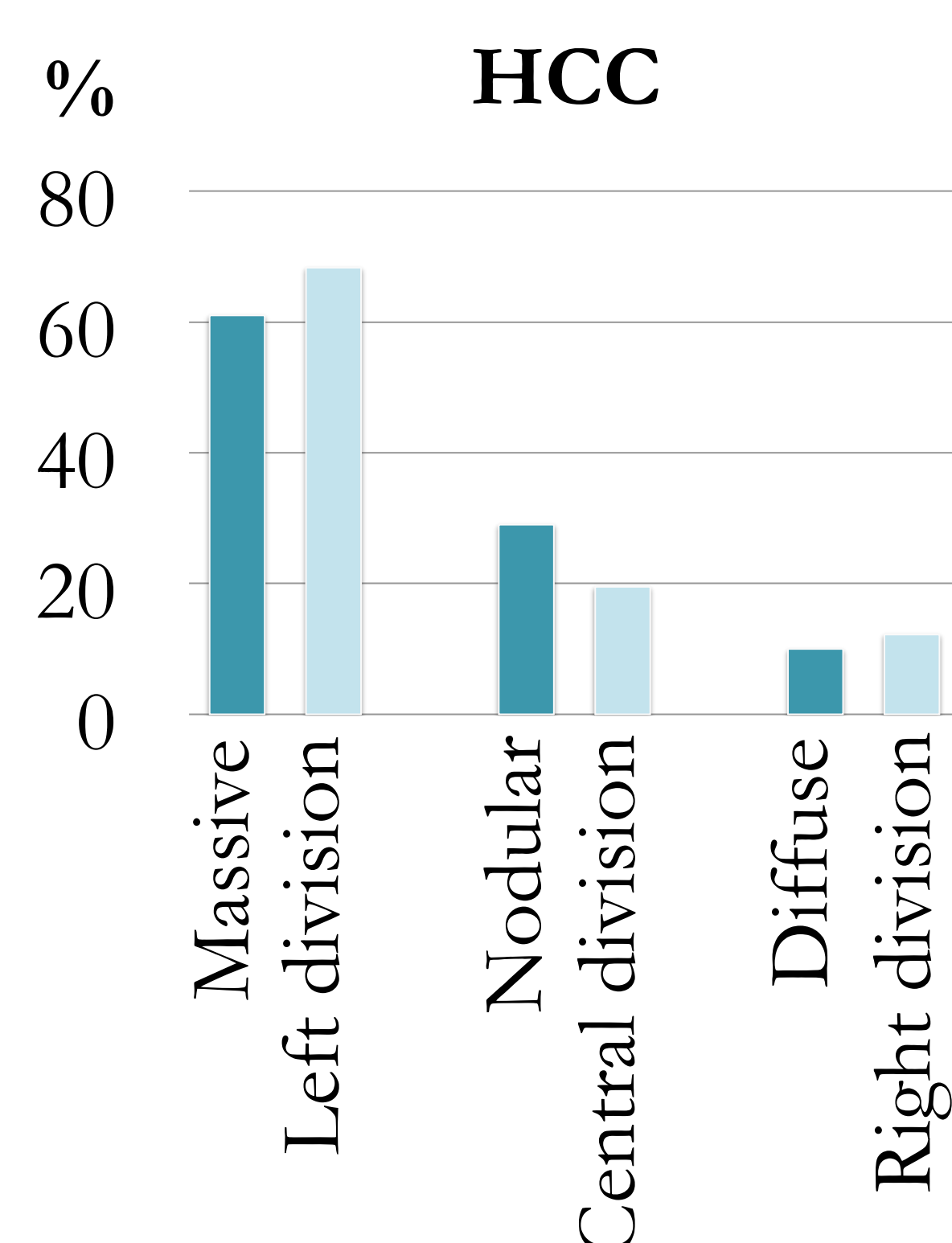


INTRODUCTION and OBJECTIVES

- Liver tumors are one of the reasons for surgical intervention with nonspecific signs.
- Regeneration of hepatic tissue to restore a normal liver function is possible after removal of 70%-80% of the hepatic mass.
- The objective of this final degree project is to make a literature review about hepatic lobectomy and their challenges adding the acquired experience in HCV.

HEPATIC NEOPLASIA

- There are 4 types of primary hepatic neoplasia, being the most common the hepatocellular tumor (hepatocellular carcinoma or HCC).



PRE-SURGICAL CONSIDERATIONS

- **Coagulation:** Prolongation of PT and PTT can be treated with preoperative vitamin K1 for 24 hours prior to surgery or administration of fresh frozen plasma or cryoprecipitate.
- **Biochemistry:** ↑ ALT, ALP, GGT, albumin.
- **Hypoglycemia:** It appears if 70% of the hepatic mass is removed.
- **Anesthesia:** Hepatic biotransformation P-450 and prolonged drug effects. High levels of capnography are needed to avoid vasoconstriction.

IMAGE DIAGNOSIS

- Abdominal radiography
- **Abdominal ultrasound**
- TC
- MRI

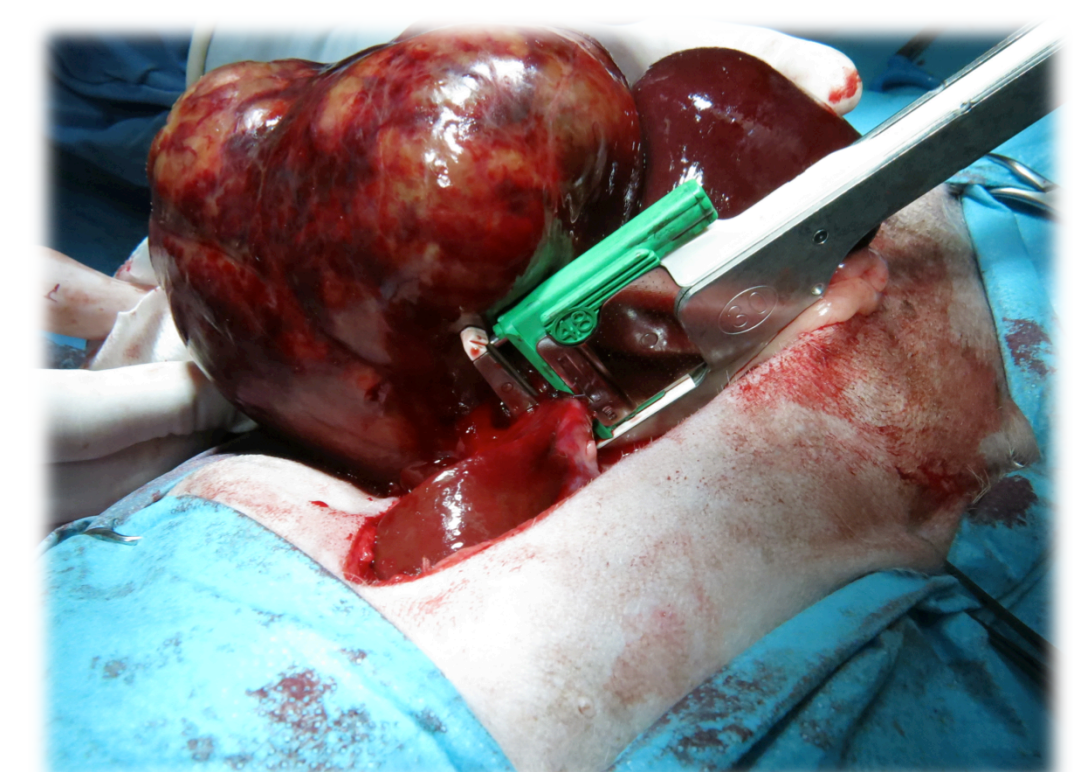
Abdominal ultrasound with HCC mass



SURGICAL TECHNIQUE

LEFT DIVISION

1. Cranial two-thirds midline laparotomy.
2. Expose hepatic artery and hepatic biliary duct located in the hepatoduodenal ligament.
3. Location of the branch of portal and hepatic vein and ligation of the portal branch.
4. Triangular ligament is separated.
5. V3 TA30 application in the lateral hepatic vein and remanent tissue.



CENTRAL DIVISION

- Complete removal necessitates removal of both lobes, right medial and quadrate, together.
- The gallbladder can be preserved if the tumor is not associated with this structure.
- To prevent torsion of the adjacent lobes, a coating omentum can be made.

COMPLICATIONS and POSTOPERATIVE CARE

The main potential complication of this procedure is **hemorrhage:**

- Direct pressure
- Pringle's maneuver

Other complications are portal hypertension, hepatic insufficiency, hypoglycemia, thromboembolism.

Postoperative care: ECG monitoring (ventricular arrhythmias), hematocrit, albumin, electrolytes, hypotension, among others.

Analgesia: with fentanyl, morphine or buprenorphine.

Antibiotics are usually not necessary.

PROGNOSIS

- Median survival times are 1460 days in dogs with surgical treatment.
- Tumor recurrence is rare and reported to be 0% to 13% after liver lobectomy.
- Poor prognosis signs: lack of surgical treatment, ↑ ALT, ALP, ASP, AST and ALT: AST ratios, and right-sided mass location and postoperative hypotension.

CONCLUSIONS

- Hepatic lobectomy currently achieves greater surgical success thanks to the incorporation of new devices, such as TA stapler.
- Dogs tolerate extended hepatectomy, with up to 90% of the hepatic mass being excised.
- Larger hilar tumors or those surrounding the caudal vena cava or portal vein are particularly difficult to extract.
- Patients undergoing right or extended lobectomies have the highest mortality rates.
- Chemotherapy has poor effectiveness for primary liver tumors.
- Subtotal removal does affect survival because more aggressive and invasive components are found at the periphery of the tumor.
- CT reveals the invasion of several lobes giving an erroneous result, because the surgery shows a single location.

