1. INTRODUCTION

Brachycephalic syndrome (BS) is a common finding in small animal practice due to the increasing popularity of the affected breeds. The syndrome includes primary anatomical components based on typical breeding standard with their corresponding secondary sequelae that compromise the quality of life of these animals.

2. OBJECTIVES

- To make a literature review of BS’ most remarkable aspects.
- To detail the diagnostic methods and treatment (mainly surgical) applicable to BS.
- To describe surgical primary and secondary components: stenotic nares, elongated soft palate and everted tonsils; paying special attention to advantages and disadvantages of each technique.
- To review the existent literature about new developments on BS.

3. BRACHYCEPHALIC SYNDROME

3.1. Epidemiology

Dog breeds most commonly affected are English and French bulldogs, Pugs, Boston terriers, Pekingese, Shih Tzu, Maltese, Cavalier King Charles Spaniels, Boxers, Yorkshire terriers, Pincers miniature, Dogue de Bordeaux and Bullmastiffs.1,2 Brachycephalic cat breeds include Himalayan and Persian.1 BS’ components can be present at birth but may not be pathological until the animal has two or three years old.1 There is no gender predisposition1,3 although some studies show higher incidence (2:1) in male dogs.

3.2. Anatomical abnormalities

BS is a combination of anatomical abnormalities that result in a reduction of skull length not accompanied by a proportional reduction of the oral cavity soft tissues and can be classified into primary or secondary1,3. Primary components include: stenotic nares, elongated soft palate, nasopharyngeal turbinates and hypoplastic trachea.1 Secondary components are: everted laryngeal saccules, laryngeal collapse, bronchial collapse and everted tonsils.1,2

3.3. Clinical signs

Most common clinical signs include: stertor, stridor, snoring, coughing, increased respiratory effort, hyperthermia, collapse, cyanosis and syncope.1 The disease has different degrees that may be worsened by obesity or stressful situations such as heat, excitement or exercise.1 Gastrointestinal signs (p.e. vomiting, regurgitation, ptalism and dysphagia) are also common and are thought to be the result of a high positive abdominal pressure.1,4

4. MEDICAL TREATMENT

- Minimize stress  
- Sedation2,5
- Keep calm temperature and oxygenation2,5
- Inflammation of soft tissues  
- GGC at antiinflammatory doses2,3,5
- Gastrointestinal signs  
- Prokinetics, antacids, proton-pump inhibitors and gastric mucosal protectors2,5

5. SURGICAL TREATMENT

- Expiration: Lateral slit
- Inspiration: Horizontal slit
- Amputation
- Alapexy
- Alaplasty
- Folded flap palatoplasty (FFP)
- Staphylectomy
- Tonsilectomy

Advantages
- Less surgical and post-op time. Less bleeding and less post-op care when using laser.
- No need for ala nasi flacidity so the alaplasty technique fails. The aperture of nares not depend on ala nasi flaccidity.2
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- No need for ala nasi flacidity so the alaplasty technique fails. The aperture of nares not depend on ala nasi flaccidity.
- Hemorrhage. Total, the animal may continue bleeding. If the excess of tissue is not removed high risk of aspiration.

Disadvantages
- Hemorrhage. Post-op edema may develop in a farther area of the oral cavity so it will suppose less risk of aspiration.
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6. CONVENTIONAL SURGICAL TECHNIQUES, RESECTION WITH SURGICAL LASER AND PLASTY. ADVANTAGES AND DISADVANTAGES OF EACH.

7. FUTURE AND CONCLUSIONS

The definitive treatment for the BS is always surgical. Early intervention can slow down the progression of the signs and complications. There are several surgical techniques and, during the last years, the use of CO2 laser ensures less surgical time, bleeding, swelling and intra- and postoperative pain, as well as a more precise tissue resection. A possible explanation for the poor therapeutic success after conventional surgeries, could be the lack of consideration in the diagnosis, management and treatment of the rest of intranasal structures. To understand the BS, all the efforts should relapse into the selection of these breeds, so that in the future, the objective is to encourage more moderate craniofacial morphologies in order to reduce the prevalence and severity of BS.

8. REFERENCES