Improve Veterinary Education

Anorectal Tumours

Introduction and Learning Objectives

This lecture addresses anal and rectal tumours in the dog, with particular emphasis on recognising biological behaviour and clinical presentation of colorectal and perianal masses. A major focus is placed on apocrine gland anal sac adenocarcinoma (AGASACA). The diagnostic approach, rationale for staging, and the relationship between tumour stage, prognosis, and survival are explored. Current management strategies are reviewed, including surgical techniques and the role of adjuvant therapies.

Rectal Masses: Pathology and Clinical Presentation

Rectal masses in dogs are more commonly benign, most frequently presenting as adenomatous polyps. These lesions are typically raised or pedunculated, although sessile forms are also encountered. Male dogs are overrepresented, and certain breeds, including Collies, West Highland White Terriers, and Miniature Dachshunds, appear predisposed. Malignant transformation of these benign lesions can occur, resulting in adenocarcinomas. Given the presence of smooth muscle in the rectal region, leiomyosarcomas may also arise. Sessile rectal tumours may occasionally be plasmacytomas, while lymphosarcoma can occur anywhere in the gastrointestinal tract, particularly in cats.

Malignant transformation of adenomatous polyps begins with invasion through the lamina propria, progressing to carcinoma in situ. Intervention is ideally undertaken at the stage of adenoma or carcinoma in situ, before invasion beyond the basement membrane leads to invasive carcinoma.

Clinical signs associated with rectal masses are relatively characteristic due to their location in the distal colon and rectum. Overstimulation of the rectum commonly results in severe diarrhoea, tenesmus, and the passage of mucoid faeces. Rupture of a mass may be an early indicator, with owners noticing diarrhoea and haematochezia. Straining to defecate is common, and chronic diarrhoea with malabsorption can lead to marked weight loss in advanced cases. Diagnosis is most often achieved by rectal examination, during which masses may be palpated or even visualised. Pedunculated lesions may prolapse through the anal opening and can sometimes be exteriorised digitally. Proctoscopy or colonoscopy may be required to assess lesion number and extent.

Diagnostic Work-Up and Staging of Rectal Tumours

Abdominal ultrasonography is routinely recommended to assess sublumbar and medial iliac lymph nodes, as these are common sites of early metastasis. Haematological and biochemical abnormalities may provide additional clues, although findings are not pathognomonic.

Adenomatous polyps may be associated with leukocytosis, leiomyosarcomas with hypoglycaemia, and plasmacytomas with hyperproteinaemia.

Surgical Management of Rectal Tumours

Treatment of adenomatous polyps often involves partial rectal pull-through with excision at the base of pedunculated lesions, which can be curative for both adenomas and carcinoma in situ. Lesions located further proximally within the rectum are more difficult to access, even with significant rectal prolapse. In such cases, a circumferential pull-through with anoplasty may be required. A dorsal surgical approach, involving resection and anastomosis, has proven particularly effective, offering excellent visualisation and well-defined anatomy. Using stay sutures and meticulous dissection, full-thickness circumferential resection followed by anastomosis can yield excellent outcomes.

Complications are largely related to contamination from faecal passage, with risks of infection, dehiscence, and breakdown of the anoplasty. These risks increase with complete rectal pull-through compared with partial procedures. Anastomotic tension and inflammation may result in stricture formation.

Recent evidence suggests that aggressive full-thickness resection may not always be necessary. A study by Cantatore and colleagues demonstrated excellent long-term survival following submucosal resection alone, with reported survival rates of 98% at five years for benign tumours, and 95%, 89%, and 73% at one, two, and five years respectively for malignant lesions. This represents a significant shift towards less aggressive surgical management.

Postoperative complications include dyschezia, tenesmus, stricture formation, and recurrence when margins are incomplete. In cases of rectal lymphoma, chemotherapy using COP or CHOP protocols is recommended, with reported median survival times approaching four years.

Perianal Tumours Other Than AGASACA

Perianal tumours include circumanal and sebaceous adenomas derived from hepatoid cells, which may extend to the tail base and other perianal regions. In intact males, castration alone may result in regression of these tumours. Malignant variants include sebaceous adenocarcinomas and circumanal gland adenocarcinomas.

Apocrine Gland Anal Sac Adenocarcinoma: Overview and Clinical Features

AGASACA is the most clinically significant perianal malignancy and accounts for approximately 17% of all perianal tumours. Other malignant tumours in this region include squamous cell carcinoma and malignant melanoma, although these are less common. AGASACA lesions may be externally visible or detectable only on rectal palpation. They can be extremely small, sometimes measuring only two millimetres in diameter, presenting as firm nodules adjacent to or involving

the anal sac. Clinical signs may be absent in early disease, emphasising the importance of thorough rectal examination. Any palpable abnormality of the anal sac warrants further investigation and sampling, including assessment of serum calcium concentrations.

AGASACA has been reported to be overrepresented in English Cocker Spaniels, although it can occur in any breed and is frequently identified in mixed-breed dogs. Histological classification is based on tumour growth patterns, including solid, tubular, rosette, pseudorosette, and papillary forms. Expression of molecular markers, including c-KIT mutations, may influence tumour behaviour and represent potential therapeutic targets for tyrosine kinase inhibitors such as toceranib phosphate.

Clinical signs commonly include perianal discomfort manifested by excessive licking, tenesmus, and altered faecal shape due to compression by enlarged sublumbar lymph nodes, often described by owners as ribbon-like stools. Haematochezia and visible ulcerated masses may be present. Approximately 50% of dogs develop paraneoplastic hypercalcaemia, leading to polyuria, polydipsia, lethargy, and vomiting. Neurological signs such as lameness, weakness, paresis, and pain may occur if metastatic disease involves the lumbosacral vertebrae.

Diagnosis and Staging of AGASACA

AGASACA is often detected incidentally during routine anal sac examination. A minimum diagnostic database includes haematology, biochemistry, and urinalysis, with particular attention to serum calcium. Measurement of parathyroid hormone-related peptide is useful in cases of hypercalcaemia. Paraneoplastic hypercalcaemia has been reported in approximately 50% of cases and is driven by tumour-derived parathyroid hormone-related peptide.

Fine needle aspiration may suggest a diagnosis but can be inconclusive. Cytology typically reveals a neuroendocrine appearance characterised by bare nuclei with minimal cytoplasm. Incisional biopsy is reserved for equivocal cases and should be limited to small samples. Enlarged lymph nodes must be sampled, either ultrasonographically or surgically, to differentiate reactive from metastatic disease.

Metastasis to regional lymph nodes is extremely common, occurring in up to 96% of cases, most frequently affecting medial iliac, internal iliac, and sacral nodes. Distant metastasis to lung, liver, spleen, or bone may occur even with very small primary tumours. Staging therefore relies on imaging modalities such as ultrasound, computed tomography, or magnetic resonance imaging, with radiography providing limited information on disease extent.

Surgical and Adjunctive Management of AGASACA

Surgical excision remains the mainstay of treatment. Lymphadenectomy is often performed first via an abdominal approach, followed by excision of the primary anal sac tumour. Surgical

positioning may vary according to surgeon preference. Preoperative medical management of hypercalcaemia is recommended to minimise renal complications.

Complete excision is rarely achievable due to anatomical constraints and the risk of damaging the external anal sphincter. Extensive resection increases the risk of faecal incontinence and iatrogenic perineal herniation. Reconstruction may involve mobilisation of remaining sphincter muscles and myoplasty using the internal obturator or semitendinosus muscles. Metastatic lymph nodes are often well encapsulated and may be removed by careful dissection, including minimally invasive approaches.

Chemotherapy has not been shown to improve overall or disease-free survival, regardless of tumour size, metastatic status, or presence of hypercalcaemia. Radiation therapy is highly effective in reducing tumour size but does not significantly improve survival when used alone. Combined approaches, including radiation followed by surgery, may improve functional outcomes in selected cases. Reported median survival times are approximately 384 days with radiation alone and 628 days with combined modalities.

Overall median survival time for AGASACA is approximately 671 days. Disease progression is markedly increased in the presence of lymph node metastasis, although repeat metastasectomy can extend survival in selected patients.

Postoperative Complications and Outcomes

Postoperative complications include transient faecal incontinence, haematochezia, tenesmus, wound infection, and dehiscence. Long-term faecal incontinence is uncommon, even with resection of more than 50% of the anal sphincter circumference. Techniques to reduce incontinence include apposition of remaining sphincter ends using tension sutures. Stool softeners may be used temporarily to manage postoperative straining. Wound complications are often managed conservatively, allowing healing by second intention, with delayed surgical revision if required. Tumour recurrence remains a significant concern, with reported rates of up to 45%.

Conclusion

Anal sac adenocarcinoma represents a significant proportion of perianal tumours in dogs. Many rectal tumours are benign and curable if detected early, particularly pedunculated adenomatous polyps. Surgical excision remains the cornerstone of treatment for both rectal tumours and AGASACA. While tumour size, hypercalcaemia, and lymph node metastasis do not appear to influence overall survival directly, they are important factors in disease progression and metastatic behaviour. Thorough staging, appropriate surgical planning, and long-term monitoring are essential for optimal patient outcomes.