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Compartmental Excision for Intramuscular Sarcomas in Dogs: A Clinical Report

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ABSTRACT

Compartmental excision involves removing an entire anatomical region where defined structures act as natural barriers to tumour extension. While widely adopted in human oncology, the technique has been infrequently reported in veterinary practice. This study describes complete muscle resection performed in three dogs diagnosed with distinct intramuscular sarcomas and reports their clinical outcomes. Medical records were reviewed for preoperative findings, surgical details, histopathological results, and follow-up. All enrolled cases had sarcomas confined to a single muscle belly (semitendinosus, biceps brachii, and splenius capitis). Complete resection of the affected muscle was achieved in each dog. One dog developed transient moderate lameness postoperatively due to dorsal scapular displacement, attributed to serratus ventralis tenotomy required for removing the splenius capitis insertion. All dogs demonstrated full functional recovery within one month. Histopathology confirmed complete tumour excision with intact fascial boundaries in all cases. These findings suggest that compartmental excision can provide effective local tumour control and may serve as an alternative to limb amputation or more extensive surgery, particularly when radiotherapy is not feasible.

Keywords: Local/Minimally invasive surgery, Compartmental surgery, Intracompartmental muscular sarcomas, Dog, Surgical oncology

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Introduction

A thorough assessment of distant metastatic spread, along with precise delineation of a tumour's anatomical boundaries and its relationship to surrounding structures, is essential for appropriate surgical planning aimed at achieving local tumour control. In human oncology, sarcomas are categorized as either intracompartmental or extracompartmental depending on their interaction with the fascia—a connective tissue layer firmly associated with muscle. Individual muscles or groups of muscles encased within a deep fascial layer are considered a compartment [1].

A compartment is defined as an anatomo-functional region sharing a common developmental origin and enclosed by distinct connective tissue boundaries, primarily fasciae [2]. The rationale behind compartmental excision is that solid tumours arising within a compartment typically expand internally and remain contained by these fascial barriers [1,3]. Thus, removing the entire compartment can achieve local tumour control equivalent to that of more aggressive surgical approaches [1,3]. The concept of anatomical compartments was first introduced for soft tissue sarcomas during a time when radiotherapy was not routinely available [1].

In recent years, this principle has been extended to neoplasms of the tongue—where preserving tissue is vital for maintaining speech and swallowing—[4,5] as well as to malignancies of the lower female genital tract [2].

Compartmental surgery has also been explored in veterinary medicine for managing solid tumours, particularly in cases where surgery represents the primary or sole treatment option acceptable to pet owners [6].

Compartmental surgery in human medicine

In the early 1980s, Enneking's anatomical investigations of thigh compartments profoundly reshaped the surgical management of soft tissue sarcomas. His work demonstrated that low-grade, intracompartmental sarcomas could be excised conservatively, reducing morbidity while still achieving satisfactory local tumour control [1,3]. Enneking defined the body as a series of discrete anatomical compartments and introduced a classification system to guide musculoskeletal tumour resection according to patterns of tumour spread [1,3].

He proposed that certain structures—such as fascia, cortical bone, and periosteum—can function as natural barriers to tumour progression. Observations indicated that low-grade, slowly progressive sarcomas tend to extend along paths of least resistance and generally remain confined within their fascial boundaries [1,3]. When this containment is present, removing the entire compartment can effectively eliminate the tumour while avoiding more debilitating procedures, such as limb amputation.

However, this level of local control is often insufficient for high-grade or infiltrative sarcomas, which may breach fascial barriers via perforating vascular channels [3]. Kawaguchi later refined the concept of anatomical barriers by translating them into measurable surgical margins. He distinguished between thin barriers—such as muscle fascia, adult periosteum, vascular sheaths, and epineurium—which correspond to a 2-cm margin, and thick barriers—such as joint capsules and articular cartilage—which equate to margins of approximately 3–5 cm when fully resected [7].

Tumours located in extracompartmental fascial regions or in anatomically complex sites with poorly defined fascial boundaries (e.g., groin, popliteal fossa) present greater challenges for achieving local control [3]. Subsequent human studies have supported Enneking's principles, reporting improved survival and reduced local recurrence compared with traditional wide-margin excisions [8].

Nevertheless, compartmental surgery is not universally applicable. In a study of 143 soft tissue sarcomas, only one-third met the criteria for compartmental excision; the remainder originated in subcutaneous tissues or had already infiltrated adjacent compartments [9]. Tumour position within the muscle also influences feasibility: sarcomas rarely arise centrally and more often extend toward tendinous origins or insertions, making the procedure insufficient on the tumour side and unnecessarily radical on the opposite side [9].

In recent years, Enneking's approach has faced criticism as less invasive techniques have gained prominence, particularly with the expanded use of radiotherapy in multimodal treatment strategies. Radiotherapy enables surgeons to decrease the extent of resection while still minimizing recurrence risk [10].

Compartmental surgery in veterinary medicine

While the introduction of radiotherapy has largely replaced compartment-based surgical approaches in human medicine, this shift is less applicable in veterinary practice, where the high cost of radiotherapy often limits its use. Consequently, aggressive surgical excision frequently remains the only feasible treatment for malignant tumours in animals.

Only a limited number of veterinary studies have examined compartmental tumour excision. The increasing availability of computed tomography (CT), which provides detailed characterization of tumours and their spatial relationships with adjacent structures, has expanded the potential for this technique by facilitating more precise surgical planning and reducing both surgical aggressiveness and postoperative morbidity.

Current trends in veterinary surgical oncology favour abandoning routine "en bloc" resections in favour of more deliberate, anatomically informed excisions that account for natural tissue barriers separating the tumour from surrounding structures. In 2014, Bray described an anatomically guided hemipelvectomy technique that enabled compartmental removal of pelvic tumours [11]. This approach achieved better local tumour control compared with a retrospective study by the Veterinary Society of Surgical Oncology, in which nearly one-third of cases treated with traditional wide-margin excision resulted in incomplete margins [12]. Additionally, anatomical dissection that removes muscles at their origin, rather than via mid-belly transection, is generally associated with less haemorrhage and postoperative pain.

Despite certain limitations, Bray's work established a foundation for adapting compartmental surgery to veterinary oncology [12]. Nonetheless, the procedure is applicable less often in veterinary than in human medicine, largely because many mesenchymal tumours in animals originate in the subcutis rather than within muscle tissue [6].

However, this does not necessarily preclude anatomical excision: in selected cases, subcutaneous tumours can still be removed using the underlying muscular compartment as a natural barrier [13]. Using this principle, Bray and Polton reported the compartmental resection of one or more muscle compartments in 21 cats with feline injection-site sarcoma [13]. Compartmental excision provided comparable oncologic outcomes to conventional wide-margin surgery but with reduced morbidity [14–16]. Moreover, traditional en bloc excision does not account for skip metastases following paths of least resistance, potentially leading to excessive resection in some areas and inadequate removal in others [13]. In the same study, neoadjuvant epirubicin was administered in conjunction with compartmental excision; however, the effectiveness of neoadjuvant chemotherapy in reducing surgical dose or improving outcomes in feline injection-site sarcoma remains undetermined [17].

Recently, anatomical classifications of the fasciae and superficial musculature of the canine neck, trunk [18], and forelimb [19] have been published to guide surgeons in selecting appropriate deep surgical planes for cutaneous or subcutaneous tumour removal. These studies describe four fascia types: type I, discrete sheets; type II, tightly adherent to thin muscles; type III, tightly adherent to thick muscles; and type IV, associated with periosteum [18,19]. Further anatomical research on deep muscle fasciae is needed, as different fascial types may vary in their effectiveness as tumour barriers, consistent with the observations of Kawaguchi [7]. Such information may prove valuable for predicting outcomes across tumour histotypes and grades.

Compartmental resection has also been applied to peripheral nerve neoplasms, following the principles established in human oncology. In this approach, the affected nerve segment is excised with defined proximal and distal margins, with limb amputation reserved only for exceptional cases [20]. In one study, 16 dogs with brachial plexus peripheral nerve sheath tumours underwent limb-sparing compartmental surgery. Fourteen of these dogs showed improved limb function postoperatively, and the majority achieved tumour-free margins on histological examination [21].

Study objective

This case series aims to evaluate the practicality, surgical technique, and clinical outcomes of compartmental muscle excision in three dogs with intramuscular soft tissue sarcomas.

Materials and Methods

Case selection

Medical records from the Veterinary Teaching Hospital at the University of Turin (Italy) were reviewed for dogs diagnosed with intramuscular sarcomas between January 2018 and June 2022.

Inclusion criteria were:

1. Histologically confirmed muscular sarcoma.
2. Comprehensive staging to rule out metastases and confirm intact fascial boundaries around the tumour.
3. Complete resection of the affected muscle compartment.
4. Full histopathological documentation.
5. Minimum postoperative follow-up of 30 days.

Owners provided informed consent for all procedures, including diagnostic tests (cytology, blood work, urinalysis, cardiac evaluation, and incisional biopsy if indicated), anaesthesia, total-body CT imaging, surgical excision, and histological analysis. All dogs received standard perioperative care, including pain management. Since this study was retrospective and did not involve experimental interventions, formal ethical approval under Italian Legislative Decree 26/2014 was not required, and no additional consent was obtained for inclusion in this study.

Surgical procedure

Dogs were premedicated with an intramuscular combination of dexmedetomidine (2 mcg/kg; Dexdomitor®, Orion Pharma) and methadone (0.2 mg/kg; Synthadon®, Le Vet Beheer). Anaesthesia was induced with intravenous propofol (3 mg/kg; Proposure®, Merial Italia) and maintained with isoflurane in oxygen (Isoflo®, Esteve Spa). The surgical site was clipped, aseptically prepared, and positioned to ensure full access to the affected muscle. Complete excision of the muscle belly, including its tendinous attachments, was performed. Prophylactic cefazolin (20 mg/kg; Cefazolina Teva) was administered intravenously 20 minutes before incision and repeated every 60 minutes until the end of surgery.

Histopathological assessment

Excised specimens were evaluated with haematoxylin and eosin staining by pathologists at the University of Turin, following Roccabianca *et al.* [22]. Surgical margins were assessed qualitatively at the fascial and tumour interfaces [7]. Margins were classified as “non-infiltrated” if tumour cells were absent, or “infiltrated” if tumour cells were present at or near the margin without an intervening fascial barrier.

Postoperative management and follow-up

After surgery, dogs received supportive care with intravenous fluids (lactated Ringer’s solution at 2 mL/kg/h) and pain relief using either methadone (0.5 mg/kg IV every 8 hours; Semfortan®, Eurovet Animal Health) or buprenorphine (0.3 mcg/kg IV every 12 hours; Temgesic®, Schering-Plough). Anti-inflammatory therapy was provided with meloxicam (Metacam®, Boehringer Ingelheim), starting at 0.2 mg/kg IV on the day of surgery and reduced to 0.1 mg/kg IV on subsequent days. Upon discharge, which occurred between one and five days postoperatively, all dogs were fitted with Elizabethan collars and prescribed oral meloxicam (0.1 mg/kg once daily for seven days). Follow-up evaluations were performed at approximately one, two, and three weeks after discharge.

Postoperative complications were classified according to the Veterinary Cooperative Oncology Group—Common Terminology Criteria for Adverse Events (VCOG-CTCAE) [23]. Clinical outcomes, including limb mobility, recurrence-free intervals, and overall survival, were monitored through direct follow-up visits or by contacting owners and referring veterinarians. Decisions regarding additional treatments, such as chemotherapy, were made individually based on the final histopathology results.

Results

Three dogs met the study criteria for intramuscular sarcoma and were included in this case series.

Case 1

An 11.5-year-old, neutered male Labrador Retriever weighing 28 kg was referred for evaluation of a firm, painless mass measuring approximately 4 cm, located in the posterior thigh. The mass had been present for several months but had recently increased in size. The dog showed no signs of lameness or discomfort. Routine physical examination and laboratory analyses—including complete blood count, serum chemistry, and urinalysis—revealed no abnormalities. During a total-body CT scan, an incisional punch biopsy of the mass was performed **(Figure 1)**. Histological evaluation revealed a soft tissue sarcoma with chondromyxoid features.

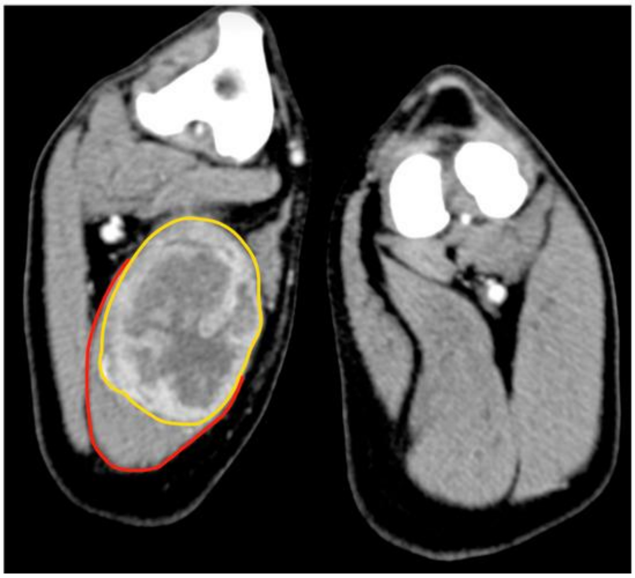

Figure 1. Computed tomographic image demonstrating the intramuscle tumor within the semitendinosus muscle. The mass is outlined in yellow, while the semitendinosus muscle belly is highlighted in red. Cranial is toward the top of the image

Surgical removal was performed with the patient in left lateral recumbency. A curvilinear skin incision was made from the ischial tuberosity to the popliteal area, incorporating a 3 cm elliptical margin around the prior biopsy tract. Following blunt dissection of the subcutaneous tissues, Farabeuf retractors were placed to expose the hamstring musculature. The semitendinosus muscle harboring the mass in its mid-to-distal portion was dissected free from the adjacent biceps femoris (laterally) and semimembranosus (medially). The muscular origin from the ischial tuberosity was sharply divided with a No. 11 blade. Proximal and distal vascular supplies (arising from the caudal gluteal artery and distal caudal femoral artery, respectively) were ligated by electrocautery. The tendinous insertion on the medial tibial crest was elevated and transected using a periosteal elevator. Dead space was minimized with 2-0 absorbable monofilament walking sutures prior to routine layered closure. A modified Robert-Jones bandage was maintained for 48 hours.

Weight-bearing with sling support was possible 12 hours after surgery. The postoperative in-hospital course was uneventful, with no seroma or wound complications, allowing discharge at 24 hours [23]. At the 7-day recheck, only mild (VCOG-CTCAE grade 1) lameness was present, accompanied by minor incision erythema from self-trauma. Lameness resolved fully by day 12, and normal athletic function (running and jumping) returned within 4 weeks. Histopathology confirmed a grade II chondrosarcoma with clean surgical margins [23].

Five months later, the dog was evaluated for severe (VCOG-CTCAE grade 3) right forelimb lameness. Imaging identified an osteolytic lesion in the distal scapula and an intrathoracic mass. Cytologic examination of the scapular lesion revealed malignant epithelial cells. Further diagnostics were declined, and the owners elected euthanasia.

Case 2

An 11-year-old, 19 kg, spayed female Bloodhound was presented for evaluation of a recurrent perivascular wall tumour (PWT) located in the caudal thigh. The dog had undergone surgical excision of the primary tumour three years prior at another veterinary clinic. The recurrence manifested as a firm thickening along the previous surgical scar, extending into the underlying musculature. On physical examination, the dog was otherwise normal, aside from a slightly reduced body condition score (2/5). Laboratory tests revealed mild neutrophilia on complete blood count.

Initial cytology obtained via fine-needle aspiration was inconclusive. Therefore, an incisional biopsy was performed concurrently with a total-body CT scan. Imaging revealed a poorly defined 5.8 × 5.5 cm mass confined to the biceps femoris muscle, demonstrating heterogeneous contrast enhancement following intravenous administration of contrast medium **(Figure 2)**. No evidence of distant metastasis was detected. Histopathological analysis of the biopsy sample was consistent with a recurrent PWT.

Figure 2. CT imaging of the biceps femoris muscle illustrating the intramuscular sarcoma in axial view (A). In the 3D reconstruction (B), the tumour is highlighted in yellow, the biceps femoris muscle is shown in red, and the lesion is indicated by a white arrow

Surgery was performed with the dog in left lateral recumbency. An elliptical incision was created around the previous biopsy site, maintaining approximately 3 cm margins, and extended both proximally to the ischiatic tuberosity and distally toward the tibial crest. The subcutaneous tissue and superficial fascia were carefully opened. Following dissection through the fascia lata, the biceps femoris was separated from the vastus lateralis. The distal craniolateral insertion on the tibial crest was then carefully detached and excised. Finally, the muscle was released from its femoral attachments by dissecting the fibres closely adherent to the bone, allowing for complete removal of the affected muscular compartment **(Figure 3A)**.

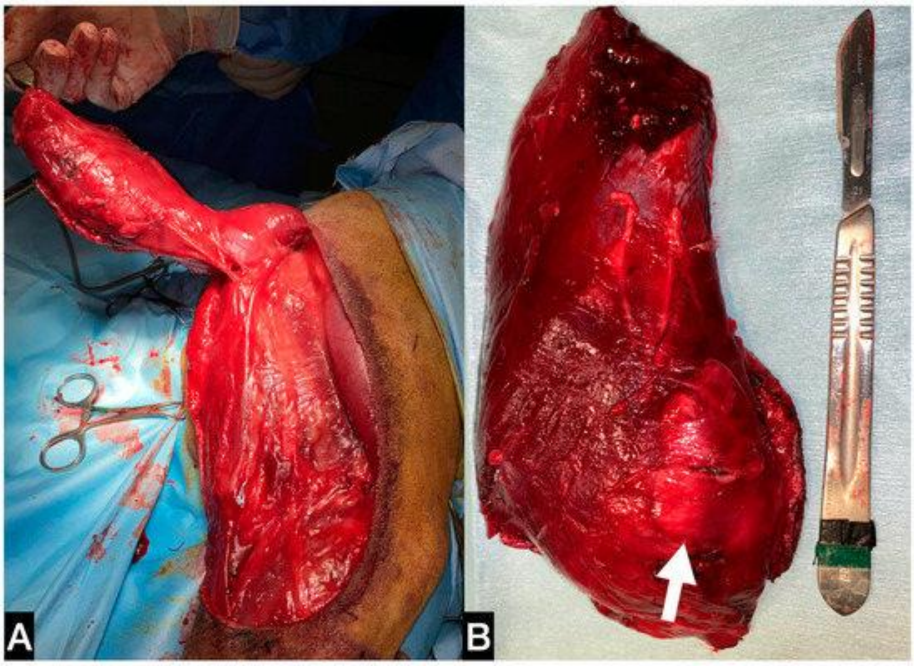

Figure 3. (A) Intraoperative image showing the stepwise detachment of the biceps femoris from its distal to proximal attachments. (B) Medial view of the excised specimen, highlighting that the tumour remained confined within the fascial envelope (white arrow)

To ensure complete excision, a tenotomy was performed at the lateral edge of the ischiatic tuberosity, allowing full removal of the biceps femoris muscle. The deep tissue layers were closed with a continuous suture pattern according to established protocols. Postoperatively, a modified Robert Jones bandage was applied for 48 hours for limb support.

The dog regained the ability to walk within the first 24 hours after surgery. The bandage was removed at discharge, 48 hours postoperatively. During the first follow-up at seven days, the patient exhibited only mild lameness (VCOG-CTCAE grade 1) [23] and a small serous discharge at the incision site, which resolved spontaneously within five days without medical treatment. At the three-week follow-up, gait had returned to normal, although a slight contour irregularity was visible in the posterolateral thigh due to the absence of the biceps muscle. Histopathology confirmed a grade I perivascular wall tumour **(Figure 4)**. At the last available follow-up, 900 days after the procedure, the dog remained alive and free of tumour recurrence.

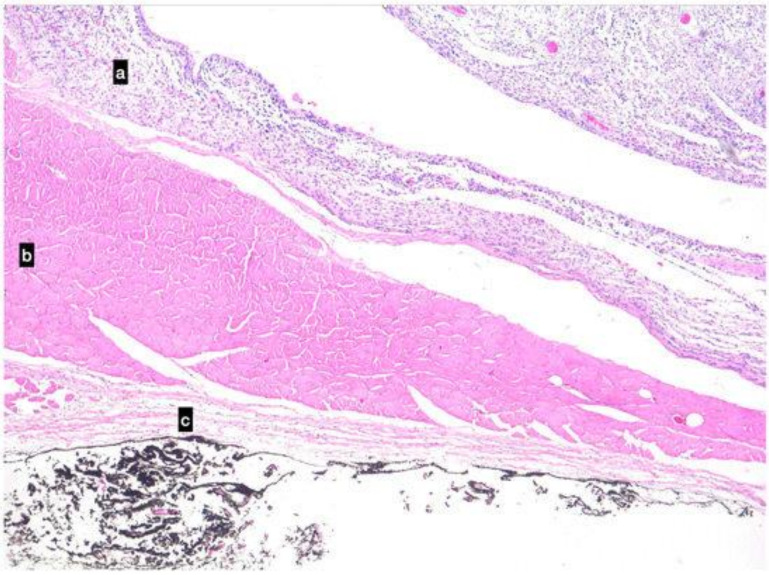

Figure 4. Microscopic images of the perivascular wall tumour. The tumour mass is visible in the upper section (a), while the lower section (b) shows its confinement within the biceps femoris muscle belly. The fascial layer remains unbreached (c), and black ink marks the deep surgical margin. Haematoxylin and eosin staining was used for visualization

Case 3

An 8-year-old, spayed female mixed-breed dog weighing 35 kg was presented with a rapidly enlarging mass measuring approximately 10 cm, located between the dorsal neck and the left scapular region. The owners reported that the swelling had been first noticed only a week earlier but had grown quickly. On examination, the mass was firm, tender, and closely adherent to underlying structures, with no palpable enlargement of regional lymph nodes. Cytological evaluation performed prior to referral indicated a malignant mesenchymal sarcoma. Total-body CT imaging demonstrated that the lesion was strictly confined to the dorsal portion of the splenius capitis muscle, with no evidence of distant metastasis or additional abnormalities **(Figure 5)**.

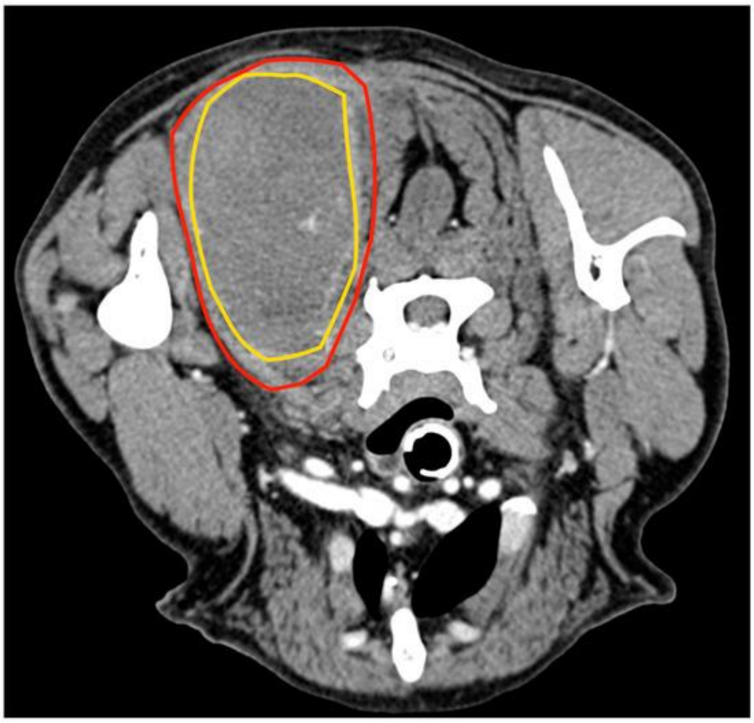

Figure 5. CT imaging showing the mass within the splenius capitis muscle, located between the seventh cervical vertebra and the medial surface of the scapula. The tumour boundary is marked in yellow, and the splenius capitis muscle is highlighted in red

For surgical access, the dog was placed in sternal recumbency with a slight rotation to the right to optimize exposure. A skin incision was made extending from the external occipital protuberance to the spinous process of the fifth thoracic vertebra, allowing adequate exposure of the dorsal cervical musculature **(Figure 6A)**.

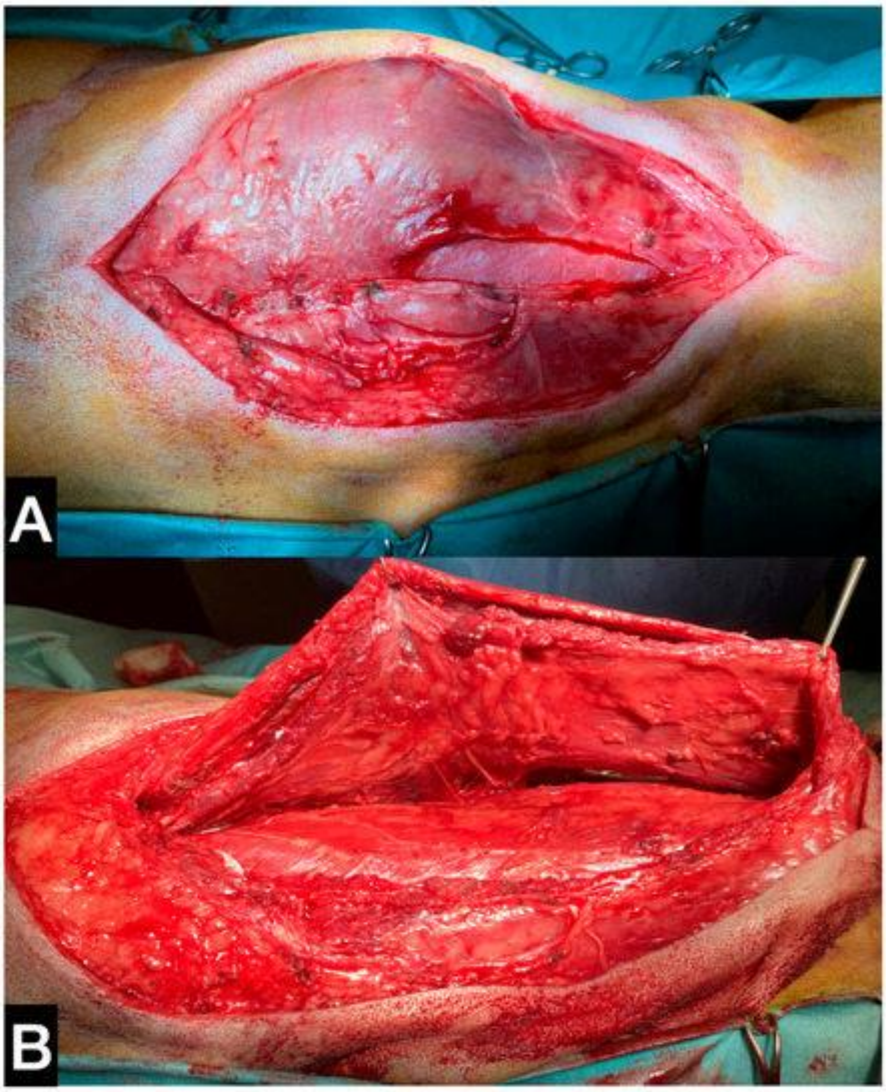

Figure 6. (A) Paramedian approach to expose the splenius capitis muscle. (B) The muscle has been mobilized from the spinous processes along the midline. Orientation: the dog's head is on the right.

Surgery was performed with the dog in sternal recumbency, slightly rotated to the right for optimal access. The splenius capitis was carefully dissected free from the rhomboideus dorsally and the serratus ventralis distally. To remove the caudal insertion on the third thoracic vertebra, a partial tenotomy of the serratus dorsalis cranialis aponeurosis was carried out. The cranial attachment at the occipital protuberance was then released, allowing the muscle to be fully isolated. The splenius belly was excised along the dorsolateral aspects of the cervical and thoracic vertebrae. The partial tenotomy and fascial layers were sutured with continuous absorbable monofilament. Given the large dead space created, an active drain was placed, and a soft thoracic bandage was applied for one week.

The dog was able to stand and take steps within 12 hours after surgery, but showed mechanical lameness (VCOG-CTCAE grade 2) due to upward motion of the left scapula. The drain was removed on postoperative day five, and the dog was discharged with the bandage still in place. At the seven-day follow-up, the incision appeared clean and dry, with no seroma. Two weeks after surgery, the dog was walking without pain, but the scapula still rose slightly during movement, resulting in mild residual lameness (VCOG-CTCAE grade 1). This abnormal motion gradually diminished over the next two months.

Histopathology confirmed a subcutaneous intramuscular hemangiosarcoma with clean excisional margins. Chemotherapy began 20 days postoperatively, starting with four cycles of intravenous doxorubicin (30 mg/m² every three weeks), followed by metronomic therapy using thalidomide (4 mg/kg) and chlorambucil (4 mg/m² orally once daily). The dog was euthanized 183 days after surgery due to seizures from brain metastases that were refractory to treatment.

Discussion

This small case series demonstrates that complete excision of a single muscle along with its fascial envelope can provide effective local control of selected intramuscular tumours. In the context of limb sarcomas, compartmental excision represents a less invasive, limb-sparing alternative to amputation. As noted by Kawaguchi [7], this approach is most appropriate when the fascia remains intact, since fascial boundaries act as anatomical barriers that can contain tumour spread while preserving healthy tissue. Limb amputation, or other more aggressive procedures, should be reserved for tumours that are either intercompartmental or cannot be removed with clean margins without causing severe or complete loss of function.

The recently proposed classifications of superficial muscular fasciae [18,19] cannot be directly applied to these cases because they do not account for intermuscular or deep fascial layers. For instance, the biceps femoris exhibits multiple fascial types: superficially, it is covered by type III fascia (tightly adherent to thick muscle), whereas caudomedially, the insertion on the bone represents type IV fascia (associated with the periosteum). Consequently, fascial characteristics may vary along the length of a muscle, depending on the tumour's location. Further anatomical studies are required to better understand deep fasciae and their role in planning tumour excisions in veterinary surgery.

Functional recovery was rapid and complete in all three dogs, likely because removal of a single muscle can often be compensated by other synergistic muscles in the same region. Compartmental excision should be avoided when muscles critical for non-redundant functions, such as the rectus femoris or triceps brachii, are involved. The biceps femoris contributes to hip extension, stifle flexion, and tarsal extension as part of the common calcaneal tendon [24], but these actions can be largely compensated by the semitendinosus, semimembranosus, and other components of the calcanean tendon, allowing for rapid restoration of weight-bearing and limb function [25]. Previous reports of complete biceps femoris excision describe favorable oncologic and functional outcomes, with wound complications being rare and generally related to extensive skin removal [25].

Similarly, the semitendinosus can be fully transposed, as in perineal hernia repair, without significant functional loss [26,27]. Its primary actions—hip and tarsal extension—are partially shared with the semimembranosus (hip extension) and the remaining structures of the common calcanean tendon (tarsal extension) [24]. The splenius capitis contributes to head and neck extension, elevation, and lateral movement [24]; these actions can be compensated by the longissimus cervicis muscle.

Finally, because physical examination alone cannot reliably determine the precise location or extent of deep-seated tumours, advanced imaging techniques such as CT or MRI are essential for accurate preoperative planning and successful compartmental excision [28].

Magnetic resonance (MR) imaging offers superior soft tissue characterization compared to CT, which has known limitations in evaluating soft tissue sarcomas. In human oncology, MR findings are crucial for determining treatment strategies, planning surgery, and assessing fascial involvement [29]. Despite its advantages, CT remains widely used in veterinary practice due to lower cost and greater availability of equipment. Advanced imaging is essential in tumour staging to identify the specific muscle involved and assess the gross integrity of the fascial envelope. Ultrasonography can also provide information on fascial integrity, as fascia generally appears as a linear hyperechoic structure against the surrounding hypoechoic muscle [30]. However, ultrasound is limited to superficial muscles and provides a subjective assessment.

For low- to intermediate-grade sarcomas, surgery alone may be sufficient to achieve local tumour control, although adjuvant radiotherapy can be considered. High-grade tumours, such as muscular hemangiosarcomas, are associated with high metastatic potential, and adjuvant chemotherapy is recommended even when margins are clean and staging is negative [31]. In the present series, surgery was the only available option to achieve local control in these cases.

Although limb-sparing compartmental excision is less invasive than amputation, it remains a major elective procedure requiring detailed anatomical knowledge to avoid vascular or neural injury. Complete removal of a muscle can create significant dead space, increasing the risk of seroma formation. In this series, an active drain was used only in the third case, while the other two dogs had soft padded bandages for 48 hours; no seromas developed in any dog. Nevertheless, routine drain placement may be prudent in all cases to reduce postoperative complications.

Postoperative complications were minimal. All dogs experienced transient, self-limiting lameness. In two cases, this was pain-related, resulting from surgical trauma to soft tissues. In Case 3, the persistent lameness was mechanical, due to a partial tenotomy of the serratus ventralis. Dorsal scapular displacement can occur following trauma to this muscle [32] and may be managed conservatively or surgically [33]. In this case, conservative management with a thoracic bandage allowed full functional recovery within two months. No wound dehiscence occurred in any dog, likely because the intramuscular location of the tumour permitted preservation of most skin, except around the biopsy site, which was excised with a 3-cm margin (Cases 1 and 2). Proper planning of the biopsy site is critical when considering compartmental excision, as the tissue beneath must be included in the resection [34].

The main limitations of this study include the small sample size, case heterogeneity, and its retrospective design. The rarity of intramuscular sarcomas confined to a single muscle belly in dogs contributes to these constraints. Nevertheless, this series provides practical guidance for selecting candidates for compartmental excision. When appropriate cases are chosen, local tumour control can be achieved with a less aggressive approach, preserving limb or regional function.

In summary, dogs with mid-belly intramuscular sarcomas that remain confined within the fascial layer may be suitable for compartmental excision. Careful consideration of functional outcomes is essential, and a thorough understanding of the anatomy and biomechanics of the affected region is required for optimal results.

Conclusions

Compartmental excision offers the dual benefit of achieving local tumour control while preserving the function of the affected region. In human medicine, similar outcomes can often be obtained through marginal excision combined with radiotherapy or radiotherapy alone. In veterinary practice, however, the use of radiotherapy is limited by cost and accessibility, making surgery the primary option for local control. For intramuscular soft tissue sarcomas that are confined to a single muscle and where the muscle is not critical for major limb or regional function, compartmental excision represents a feasible and effective therapeutic strategy.

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