香港獸醫專科服務

HONG KONG VETERINARY SPECIALTY SERVICES

Mandibular Fractures in Dogs and Cats

Quick Take

A mandibular fracture is a break in the lower jaw.
These fractures are common in dogs and especially cats because the mandible is narrow, delicate, and closely associated with tooth roots.

Common causes include:

- Trauma (falls, car accidents, bites)
- Blunt force injury
- High-energy play/falls in cats
- Periodontal disease (weakens the jaw)
- Neoplasia (bone tumours)

Most mandibular fractures require **surgical stabilisation.**

Timely, correct repair is essential to:

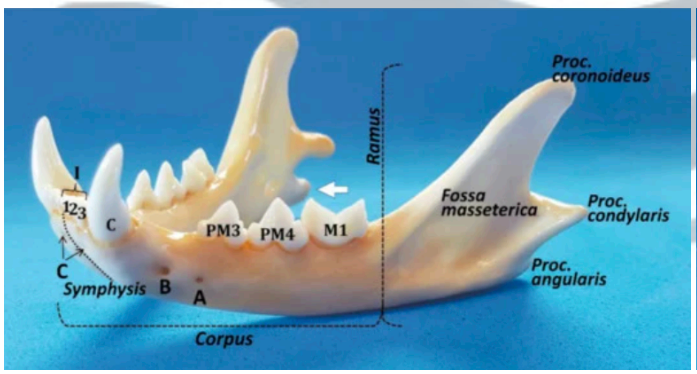
- Restore **normal bite alignment**
- Allow normal eating and grooming
- Prevent **chronic pain, malocclusio**n (misaligned teeth), and jaw dysfunction

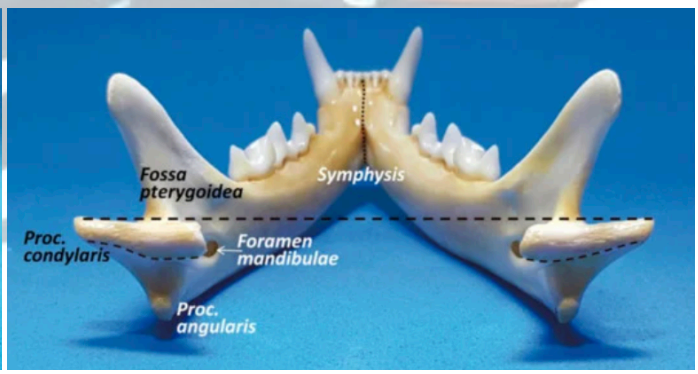
Modern veterinary dentistry and surgery offer highly effective, minimally invasive techniques that allow excellent healing and return to normal function.

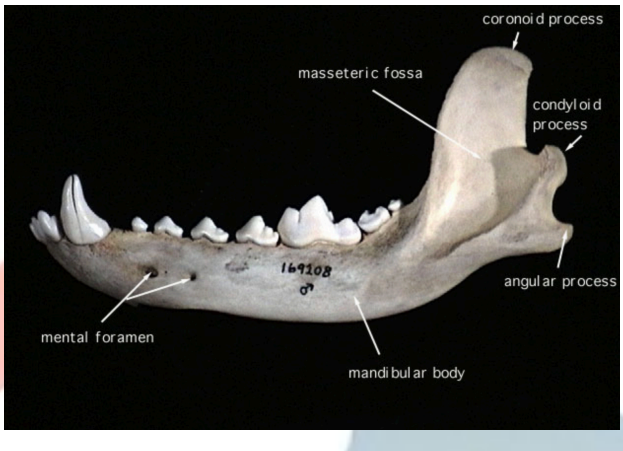
1) What's Going On Inside?

The mandible is a paired bone forming the lower jaw:
Houses tooth roots
Supports chewing and biting
Contains fragile areas (especially behind the canine tooth in cats)

Cats







When the mandible fractures:

1. The jaw loses stability
    - Pets cannot bite, chew, pick up food, or groom normally.
2. The bite (occlusion) becomes misaligned
    - This is a major concern — correct bite alignment is just as important as stabilising the bone.
3. Soft tissues are damaged
    - Gingiva
    - Oral mucosa
    - Nerves
    - Blood vessels
4. Pain and swelling limit function
    - Animals often stop eating entirely.

2) What Owners Typically Notice

- Drooling or bleeding from the mouth
- Pain when opening the mouth
- Inability to chew or pick up food
- Asymmetric or “crooked” jaw
- Teeth no longer lining up normally
- Pawing at the mouth
- Dropping food
- Swelling around the face
- Reluctance to be touched on the head

Severe cases may show:

- Exposed bone
- Misaligned lower jaw
- Broken teeth
- Difficulty breathing if swelling is extensive

3) Diagnosis

A) Physical exam

- Malocclusion
- Jaw instability
- Pain on palpation
- Tongue injuries

- Tooth fractures

B) Imaging

- Dental X-rays or CT scans are critical because fracture lines often run through:
- Tooth roots
- Mandibular canal
- Thin bone areas
- Temporomandibular joint (TMJ)
- CT scanning is strongly recommended in cats because their mandibles are extremely thin

C) Assess underlying conditions

- Severe periodontal disease
- Tumors
- Osteomyelitis
- Degenerative bone conditions
- These may change the surgical plan.

4) Treatment Overview

Mandibular fractures are almost always repaired surgically because:

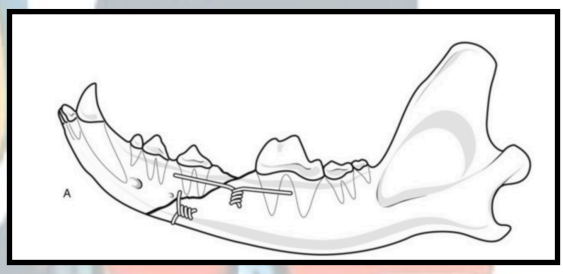
- The jaw must be precisely aligned
- The pet must eat soon after repair
- Tooth roots and the mandibular canal must be protected
- External splints/muzzle alone are rarely adequate

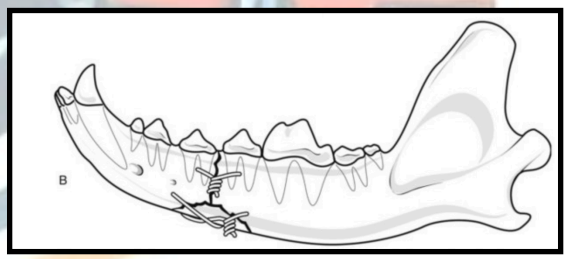
5) Surgical Options

1. **Maxillomandibular Fixation (MMF) – Jaw Wiring**

A classic but highly effective approach
This involves temporarily wiring the upper and lower jaws together in correct alignment.
Used for:

- Simple fractures
- Fractures with good natural alignment
- Young animals with fast healing
- Bilateral fractures in cats





Pros:

- Minimally invasive
- Very stable
- - Excellent occlusal control

Cons:

- The pet cannot open its mouth
- Must eat soft/liquid diet
- Risk of aspiration if not monitored

Typical **duration: 2–3 weeks**

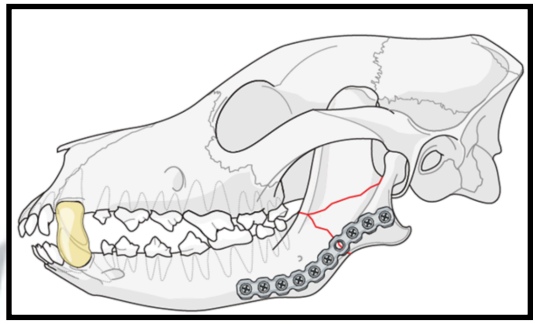
2. Intraoral Acrylic Splints

A modern, highly successful option for many cats and small dogs
An **acrylic (dental resin) splint is molded to the inside of the teeth and bonded to intact teeth.**

Benefits:

- Avoids external scars
- Very stable

- Protects oral tissues
- Preserves natural bite alignment
- Excellent for caudal mandibular fractures in cats
- Often the best choice when bone is thin



3. Miniplates and Screws (Rigid Internal Fixation)

The **gold-standard** for many dogs with adequate bone thickness.
Tiny surgical plates are attached to the mandible with screws.

Benefits:

- Strongest fixation
- Allows immediate use of the jaw
- No need to wire mouth closed
- Excellent long-term function

Limitations:
Bone must be thick enough
Tooth roots and neurovascular canal must be avoided
Harder to use in cats or tiny dogs

4. External Skeletal Fixation (ESF)

Pins placed through the skin and connected externally.

Used when:

- The oral cavity is too damaged
- The patient is too small for plates
- Infection or fractures extend into the oral space

Less common today but still valuable.

5. Mandibulectomy or Segmental Resection

Used rarely (last resort) for:

- Tumours
- Non-healing fractures
- Severe chronic infection
- Bone death (necrosis)

Pets adapt surprisingly well to partial-jaw removal when required.

6) Surgical Considerations: Why Precision Matters

The single most important factor in fixing mandibular fractures is restoring the normal bite (occlusion).
Even a perfectly aligned bone repair can fail functionally if:

- Teeth meet abnormally
- The jaw deviates left or right
- A tooth occludes painfully on soft tissue
- The tongue cannot rest properly
- The temporomandibular joint is subluxated

This is why veterinary dentists or surgeons with oral surgery training are often recommended.

7) Healing & Recovery Expectations

Healing time
Dogs: 4–6 weeks
Cats: 3–4 weeks (heal faster than dogs)

Eating
Most pets can eat soft food soon after surgery
MMF patients need liquid or gruel diets
Feeding tubes may be used for comfort in severe cases

Activity
No rough play, chewing toys, or tug games for 6–8 weeks

8) Complications & Realistic Rates

Complication	Rate	Notes
Malocclusion	5–20%	Strongly dependent on surgeon skill
Non-union or delayed union	5–10%	More common in severe disease
Tooth root damage	Low (<5%)	Avoided by dental X-rays/CT/ fluoroscopy
Infection	10–20%	Higher in bite wounds or periodontal disease Common in old toys breeds
Nerve damage (lip droop)	<5%	Often temporary
Implant loosening	5–10%	Usually manageable
Soft tissue injury	Low	Depends on fixation method

Cats have higher complication risk with bone plating due to very thin bones, so acrylic splints or MMF are often preferred.

9) Special Considerations in Cats

Mandibles are extremely **thin**
Bone often fractures **between canine tooth and first molar**
Tooth roots occupy most of the mandible
Plating risks damaging roots or canal
Acrylic splints are ideal for most feline fractures
Bilateral fractures are common, requiring careful occlusion management
Cats heal rapidly but are less tolerant of discomfort—pain control is crucial.

10) Long-Term Function & Prognosis

With proper surgery:

- **Excellent prognosis (85–95%)**
- Pets return to normal eating, grooming, and play

- Minimal long-term discomfort
- Low recurrence once healed

With poor alignment:

- Chronic malocclusion
- Painful chewing
- TMJ stress
- Tooth-on-soft-tissue trauma
- Need for **revision surgery**

Proper technique → excellent outcome.

11) Home Care After Surgery

- **Soft food for 4–6 weeks**
- No chew toys
- Pain medications
- Antibiotics if contamination present
- Oral hygiene: gentle rinsing if splint is in place
- Check incision/pin sites if ESF used
- E-collar for 10–14 days
- Monitor for drooling or foul odour (possible infection)

Follow-up appointments at:

- 10–14 days
- 4–6 weeks (radiographic confirmation of healing)

12) When to Recheck Urgently

- Sudden refusal to eat
- Bad breath or pus
- Broken splint or wires
- Jaw instability
- Increased drooling
- Bleeding
- Swelling or discharge

13) Selected Veterinary References

- ACVS — Mandibular Fractures in Dogs & Cats
- VCA Hospitals — Jaw Fracture Overview
- Verstraete & Lommer — Oral and Maxillofacial Surgery in Dogs and Cats
- DuPont & DeBowes — Atlas of Dental Radiography in Dogs and Cats
- Bar-Am et al., Vet Surgery — Miniplate fixation outcomes in canine and feline mandibular fractures
- Kolata et al., JAVMA — Mandibular trauma retrospective studies

Bottom Line

Mandibular fractures almost **always need surgical repair.**
The key to success is **restoring proper bite alignment** and using a fixation method tailored to the species and fracture location.
Dogs do well with plates, while cats excel with internal acrylic splints or MMF.
With timely surgery and careful management, most pets regain excellent, pain-free jaw function and a normal life.