

原文題目(出處)：	Removal of ectopic mandibular third molar teeth: literature review and a report of three cases. Oral Surg 2012;5:39-44
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報告日期：	101.5.11

內文：

Abstract：

- This article reviews 23 published cases of ectopic mandibular third molar teeth. We report three further cases and discuss the surgical approaches which can be used for their removal.

Introduction：

- Unerupted impacted mandibular third molar teeth occur in 20–30% of the population, with a higher prevalence in women.
- The majority of ectopic mandibular third molars are associated with cystic lesions. Others a lack of space between the second molar and ramus of the mandible, trauma and aberrant eruption
- ectopic positions include: condyle, ramus, coronoid process, sigmoid notch and lower border of the angle of the mandible.
- These teeth are often an incidental finding on a routine radiograph and no treatment is required.

Literature review：

- We found 23 cases reported in 21 papers from 1976 to 2010
- the mean age for presentation was 44.7 years (range 23–70 years).
  - eight in the condyle
  - five as subcondylar
  - three in the angle
  - three in the ramus (one of which was bilateral)
  - two in the coronoid process
  - one at the sigmoid notch
  - One bilateral case was described as being in the condyle and ramus.
- The common approaches
  - conventional intra-oral approach(including one endoscopic)
  - an extra-oral approach(pre-auricular or submandibular)
  - sagittal split osteotomy.

**Table 1** Published cases of ectopic mandibular third molar teeth in chronological order

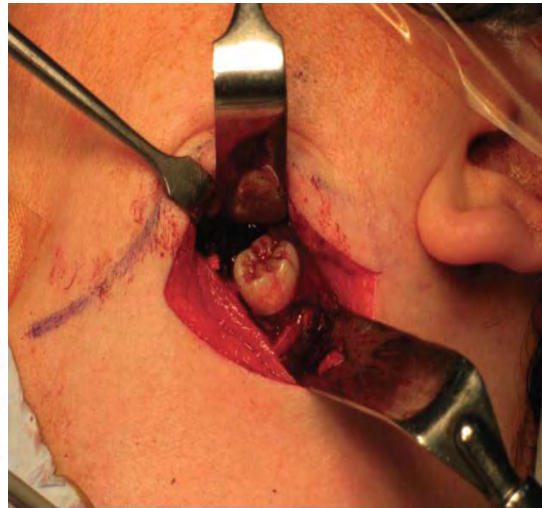
Author	Position tooth	Signs and symptoms	Management	Age patient	Sex patient
Szerlip 1978 <sup>7</sup>	Subcondylar region	Trismus, pain, swelling	Intra-oral	50	F
Markowitz et al. 1979 <sup>8</sup>	Bilateral: ramus	Facial pain right side	Intra-oral	23	F
Burton and Scheffer 1980 <sup>13</sup>	Bilateral: Condyle and high ramus	Painful swelling left side	Left side- extra-oral Right side- intra-oral	57	F
Srivastava and Singh 1982 <sup>5</sup>	Condylar neck	Discharging sinus left pre-auricular region	Sinus opened, ectopic tooth left in condyle, parotid gland dissected out	40	F
Muller 1983 <sup>11</sup>	Coronoid process	Incidental finding	Intra-oral	38	M
Chongruk 1991 <sup>12</sup>	Coronoid process	No gross disease	No treatment	27	F
Balan 1992 <sup>13</sup>	Sigmoid notch	Pre-auricular pain	Not specified	30	F
Toranzo Fernandez and Terrones Meraz 1992 <sup>6</sup>	Ramus	Swelling, pain, trismus	Not specified- 'excised surgically'	70	F
Bux and Lisco 1994 <sup>2</sup>	Subcondyle	Painful swelling with draining sinus, trismus, fever, difficulty in mastication	Extra-oral submandibular access	66	F
Adams and Walton 1996 <sup>2</sup>	Angle/ posterior body	Discomfort and unpleasant tasting discharge	Follow up long term	45	F
Medici et al. 2001 <sup>4</sup>	Condylar process	Right TMJ pain, difficulty in mastication/ mouth opening, pre-auricular swelling	Intra-oral with removal coronoid process	41	F
Turner et al. 2002 <sup>14</sup>	Subcondyle	Recurrent right-sided swelling	Extra-oral pre-auricular	47	M
Suarez-Cunquero et al. 2003 <sup>15</sup>	Condylar neck	Pain, swelling	Endoscopic intra-oral	45	M
Wassouf et al. 2003 <sup>16</sup>	Condylar neck	Painful swelling left masseteric mandibular area, tenderness to palpation left angle of mandible	Extra-oral pre-auricular	47	M
Jones et al. 2004 <sup>17</sup>	Angle?	Chronic infection/ discharging sinus, facial swelling, trismus	SSO	48	M
Wang et al. 2008 <sup>1</sup>	Ascending ramus	Right-sided facial swelling	Intra-oral	31	F
Salmeron et al. 2008 <sup>18</sup>	Condylar neck	Pre-auricular pain and swelling	Endaural approach	53	F
Salmeron et al. 2008 <sup>18</sup>	Condylar neck	Pre-auricular swelling	Extra-oral (pre-auricular)	41	M
Naaj et al. 2010 <sup>19</sup>	Angle/ posterior body	Pain, swelling, discharging fistula	Extra-oral	43	M
Bortoluzzi and Manfro 2010 <sup>20</sup>	Subcondyle	Pain, swelling, purulent discharge right side of face	Intra-oral	64	F
Gadre and Waknis 2010 <sup>21</sup>	Condyle	Pre-auricular pain, swelling on right side	Intra-oral	30	F
Gadre and Waknis 2010 <sup>21</sup>	Condyle	Left sided facial swelling, pain	Intra-oral	40	M
Pace et al. 2010 <sup>22</sup>	Subcondylar region	Erythematous skin swelling/ discharging sinus	Extra-oral (retromandibular)	53	M

**CASE I**

- 38-year-old female
- recurrent pain, bad taste and left-sided facial swelling for which several courses of antibiotics
- extra-oral examination : a swelling was noted at the angle of the mandible with a discharging sinus adjacent to the lower third molar intra-orally.
- The tooth was removed surgically under GA via an extra-oral approach (the Risdon neck approach) .
- This approach involves incising through skin and superficial fascia and platysma and exposing the superficial surface of the masseter muscle.
- After checking for the position of the branches of the facial nerve, the muscle is incised horizontally to expose the mandible.
- The histological specimen sent was reported as a dentigerous cyst



**Figure 1** Left side of orthopantomogram radiograph, case 1, showing ectopic mandibular third molar at the posterior border of the left angle of the mandible.



## CASE II

- 52-year-old female
- presented with pain, trismus and a recurrent right-sided facial swelling which failed to resolve following five courses of antibiotics (suspect parotid infection)
- Extra-oral examination revealed a discharging sinus at the right angle of mandible
- The tooth was removed under GA also via an extra-oral Risdon neck approach.
- Dissection through masseter muscle revealed a buccal perforation of the mandibular ramus .
- The tooth was removed surgically and the associated cyst was enucleated. An extra-oral drain was placed.
- Post OP : she had mild buccal branch weakness which recovered after a few weeks. The pathology was reported as a radicular cyst



**Figure 3** Right side of orthopantomogram radiograph, case 2, showing ectopic mandibular third molar at sigmoid notch/high ramus region of right mandible.



## CASE III

- 36-year-old female
- mild asthma presented with pain and recurrent intra-oral infection (no antibiotics course)
- Extra-oral examination was unremarkable.
- The procedure was carried out under GA via an extended lower third molar intra-oral incision bilaterally, extending up the ramus of the mandible.
- Both teeth were removed surgically and the associated cysts were enucleated.

- Both inferior dental nerves (IDNs) were visualised and protected.
- post-op : At the 1-month review the patient had moderate paraesthesia of both IDNs.
- The histopathology was reported as dentigerous cyst for both.



**Figure 5** Axial CT slice, case 3, showing bilateral ectopic third molar teeth in right and left ramus of the mandible.

#### Discussion :

- Pathology in the mandibular ramus and condyle can lead to serious complications such as condylar resorption, osteolysis and even condylar fracture
- An OPT or postero-anterior (PA) mandible radiograph allow initial assessment but a more detailed investigation such as a CT scan
- The anatomic position of the ectopic third molar may irritate the temporalis muscle fibres and cause pain during mastication
- All of our cases were associated with cyst formation
- In adults, a dentigerous cyst is the most common benign lesion associated with an impacted Mandibular third molar.
- The treatment of choice is enucleation and removal of the impacted tooth → result in expansion of bone causing facial asymmetry, resorption of roots of adjacent teeth and loss of bone in the ramus, extending as far as the coronoid process and condyle.

#### Sagittal split osteotomy (one case)

- This is useful where extensive removal of alveolar bone would be required. This approach allows direct visualisation of the tooth and good exposure of the surgical site. There is a 22–78% incidence of post-operative immediate IDN damage, falling to 5–26% after 6 months.

#### Intra-oral approach (eight cases)

- This is not possible if there is a limited surgical field or poor visualisation in an inaccessible region such as the lower border of the mandible.
- Cosmetic approach with no skin scar.
- However there is a high risk of damage to the IDN significant alveolar bone loss and risk of damage to adjacent teeth.
- In some cases, removal of the coronoid process may help.

Extra-oral approach (eight cases)

- This is usually either submandibular or pre-auricular.
- Teeth high in the ramus, condyle or at the lower border of the mandible may require an extra-oral approach.
- allows good exposure of the surgical site, more control over the surgical plane, less bone removal and a lower chance of pathological fracture.
- But a skin scar and a risk of damage to the marginal mandibular branch of the facial nerve. If the ectopic tooth is located below the level of the IDN then an extra-oral approach may be preferable

Endoscopic approach (one case)

- The use of fibre optic technology and minimal access surgery has allowed some cases to be treated with endoscopy.
- The advantages of this more conservative approach .Be difficult to reach via an intra-oral approach, good illumination and magnification of the surgical area, a smaller scar and decreased risk of damage to the facial nerve.
- This technique may not be indicated in all cases.

Conclusion : an extra-oral approach to the lower border, ramus or condylar regions of the mandible may be required.

題號	題目
1	下列哪一種囊腫最常見於顎骨 (A)Dentigerous cyst (B)Radicular cyst (C)Odontogenic cyst (D)Calcified odontogenic cyst
答案(B)	出處 : oral & maxillaofacial pathology P.116~121 Radicular cyst > dentigerous cyst > residual cyst > OKC >...
題號	題目
2	下列哪些囊腫經過 enucleation 後復發率最高 (A)Periapical cyst (B)Dentigerous cyst (C)Odontogenic keratocyst (D)Solitary bone cyst
答案(C)	出處 : contemporary oral and maxillofacial surgery 5 <sup>th</sup> P.458 Odontogenic cyst was aggressive.