

Cavernous sinus triangles

Dolenc's triangle

see [Dolenc's triangle](#)

There are 10 major anatomic triangles of the [cavernous sinus](#) and [middle cranial fossa](#). The first was described by D. Parkinson in [1965](#), and this scheme has been expanded upon by many microanatomists to allow for safe and consistent approaches to the petrous and cavernous carotid, contents of the labyrinth and IAC, and lesions of the cavernous sinus.

Parkinson first described a triangle in the lateral wall of the [cavernous sinus](#) in the mid-1960s' ^{1) 2)}.

Since then, the oculomotor, Glasscock's and [Kawase triangles](#) have been documented, but details of the other triangles are yet to be reported ^{3) 4)}.

1. Clinoidal Triangle

2. Oculomotor (Medial or Hakuba's) Triangle · Borders: 1. [Anterior petroclinoid dural fold](#).

2. Posterior petroclinoid dural fold. 3. Interclinoid dural fold. · Contents: 1. Oculomotor Nerve 2. Horizontal Segment of ICA

3. Supratrochlear (Paramedian) Triangle · Borders: 1. Oculomotor Nerve 2. Trochlear Nerve 3. Tentorial Edge · Contents: 1. Meningohypophyseal Trunk

4. Parkinson's triangle.

Middle Fossa Triangles

5. Anteromedial (Mullan's) Triangle · Borders: 1. Ophthalmic Nerve (V1) 2. Maxillary Nerve (V2) 3. A line connecting Superior Orbital Fissure and Foramen Rotundum · Contents: 1. Sphenoid Sinus 2. Ophthalmic Vein 3. Abducens Nerve

6. Anterolateral Triangle · Borders: 1. Maxillary Nerve (V2) 2. Mandibular Nerve (V3) 3. A line connecting Foramen Rotundum and Foramen Ovale · Contents: 1. Lateral sphenoid wing 2. Sphenoid emissary vein 3. Cavernous-Pterygoid Venous Anastomosis Middle_fossa_triangles Parkinson's (Infratrochlear) Triangle 3

7. Posterolateral (Glasscock's) Triangle · Borders: 1. Mandibular Nerve (V3) 2. Greater Superficial Petrosal Nerve 3. A line from Foramen Spinosum to Arcuate Eminence · Contents: 1. Foramen Spinosum 2. Horizontal Petrous ICA (for anastomosis) 3. Infratemporal Fossa

8. Posteromedial (Kawase's) Triangle This area is also known as The Rhomboid. Removal of the petrous bone within this triangle/quadrangle is an anterior petrosectomy. · Borders: 1. Mandibular Nerve (V3) 2. GSPN 3. Arcuate Eminence 4. Superior Petrosal Sinus -or- 1. GSPN 2. Arcuate Eminence 3. A line connecting the hiatus fallopii and Meckel's Cave · Contents: 1. Petrous Apex 2. IAC 3. Vertebrobasilar Junction Contains cochlea. 9. Inferolateral Triangle · Borders: 1. A line from the dural

entries of the Trochlear and Abducens Nerve 2. A line from the dural entries of the Abducens Nerve and the Petrosal Vein 3. The petrous apex Middle_fossa_triangles Posterolateral (Glasscock's) Triangle

· Contents: 1. Porous Trigemini (Dural opening into Meckel's Cave)

10. Inferomedial Triangle · Borders: 1. A line from the dural entries of the Trochlear and Abducens Nerve 2. A line from the dural entries of the Abducens Nerve and the Posterior Clinoid 3. The petrous apex · Contents: 1. Porous Abducens (Dural opening into Dorello's Canal) 2. Gruber's Ligament

1)

A surgical [approach](#) to the cavernous portion of the [carotid artery](#). Anatomical studies and [case report](#). Parkinson D. J Neurosurg. 1965;23:474-483.

2)

Transcavernous repair of [carotid cavernous fistula](#). Parkinson D. J Neurosurg. 1967;26:420-424.

3)

Panel discussion: glomus jugulare tumors of the temporal bone. The surgical management of glomus tumors. Glasscock ME, Jackson GC, Dickins JR, et al. Laryngoscope. 1979;89:1640-1654.

4)

Transpetrosal approach for aneurysms of the lower basilar artery. Kawase T, Taya S, Shiobara R, et al. J Neurosurg. 1985;63:857-861.

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