

## DAFTAR PUSTAKA

- Alsaeid, A. S. (2017). Paranasal Sinus Anatomy: What the Surgeon Needs to Know. *Paranasal Sinuses*, June. <https://doi.org/10.5772/intechopen.69089>
- Arfandy, R.B. 2003. Patogenesis dan etiologi rinosinusitis. Dalam : Kursus, diseksi dan demo bedah sinus endoskopik fungsional II. Makassar.
- Ariji Y, Kuroki T, Moriguchi S, Ariji E, Kanda S. Age changes in the volume of the human maxillary sinus: a study using computed tomography. *Dentomaxillofac Radiol*. 1994;23:163–8.
- Aydın, S. et al. (2014). *The Analysis of the Maxillary Sinus Volumes and the Nasal Septal Deviation in Patients with Antrochoanal Polyps*, Springer-Verlag Berlin Heidelberg. <https://doi.org/10.1007/s00405-014-3460-1>
- Ballenger, J.J. 2010. Penyakit Telinga, Hidung, Tenggorok, Kepala, dan Leher. Jilid I. Dialihbahasakan oleh Staf ahli Bagian THT RSCM-FKUI. Binarupa Aksara. Tangerang.
- Bell, GW, et al. Maxillary sinus disease: diagnosis and treatment, British Dental Journal 210, 113 - 118 (2011). <http://www.nature.com/bdj/journal/v210/n3/full/sj.bdj.2011.47.html>
- Bertelli, E; Regoli, M (2014). "Cabang dari foramen rotundum. Variasi sphenoid yang langka". *Jurnal Anatomi dan Embriologi Italia* . **119** (2): 148–53. PMID 25665284 .
- Bruening, R & Flohr, T. (2003). Protocols for multislice CT : 4- and 6-16-row application. Berlin ; New York: Springer.
- Bulescu I.A., Munteanu O., Stanculescu R., Pantu C., Enyedi M., Filipoiu F., Budu V.A. 2017. Computed-tomography volumetric study of the ethmoid labyrinth. *Romanian Journal of Rhinology*, Vol. 7 : 181-184
- Butaric, L. N., Wadle, M., & Gascon, J. (2019). Anatomical Variation in Maxillary Sinus Ostium Positioning: Implications for Nasal-Sinus Disease. *Anatomical Record*, 302(6), 917–930. <https://doi.org/10.1002/ar.24039>
- Cashman, E. C., MacMahon, P. J., & Smyth, D. (2011). Computed tomography scans of paranasal sinuses before functional endoscopic sinus surgery. *World Journal of Radiology*, 3(8), 199. <https://doi.org/10.4329/wjr.v3.i8.99>

- Chalabi. Y.E. 2010. Clinical Manifestations in different types of nasal septum deviation. 24-29
- Chavda SY, Olliff JFC (2003). The sinuses. In Sutton D, editor. Textbook of radiology and imaging. 7<sup>th</sup> ed. London: Churchill Livingston. P.6-17
- D'Ascanio L, Lancione C, Pompa G, Rebuffini E, Mansi N, Manzini M (2010) Craniofacial growth in children with nasal septum deviation: a cephalometric comparative study. *Int J Pediatr Otorhinolaryngol* 74:1180–1183
- Datu, R. 1999. Anatomi Septum Nai dan Sinus Paranasalis. Fakultas Kedokteran Universitas Hasanuddin Makassar
- Duncavage J. The maxillary sinus: medical and surgical management. New York: Thieme Medical Publishers; 2011.
- Elahi MM, Frenkel S, Fageeh N (1997) Paraseptal structural changes and chronic sinus disease in relation to the deviated septum. *J Otolaryngol* 26:236–240 9.
- El-Anwar, M. W., Raafat, A., Almolla, R. M., Alsowey, A. M., & Elzayat, S. (2018). Maxillary sinus ostium assessment: A CT study. *Egyptian Journal of Radiology and Nuclear Medicine*, 49(4), 1009–1013. <https://doi.org/10.1016/j.ejrm.2018.07.009>
- Emirzeoglu M., Sahin B., Bilgic S., Celebi M., Uzun A. 2006. Volumetric evaluation of the paranasal sinuses in normal subjects using computer tomography images: A stereological study. *Auris Nasus Larynx* : 191-195
- Fokkens W, Lund V Mullol J. European position paper on rhinosinusitis and nasal polyps. *Rhinology*. 2007: suppl 20: 5-111
- Iwanaga, J., Wilson, C., Lachkar, S., Tomaszewski, K. A., Walocha, J. A., & Tubbs, R. S. (2019). *Clinical anatomy of the maxillary sinus: application to sinus floor augmentation*. 17–24.
- John Jacob Ballenger. (1994). *Penyakit telinga, hidung, tenggorok, kepala dan leher* (Edisi XIII). Bina Rupa Aksara.
- Jun BC, Song SW, Park CS, Lee DH, Cho KJ, Cho JH. The analysis of maxillary sinus aeration according to aging process; volume assessment by 3-dimensional reconstruction by high-resolutional CT scanning. *Otolaryngol Head Neck Surg*. 2005;132:429–34

- Kalabalik, F., Ertas, E.T., (2018) Investigation of maxillary sinus volume relationships with nasal septal deviation, concha bullosa, and impacted or missing teeth using cone-beam computed tomography. *Japanese Society for Oral and Maxillofacial Radiology and Springer Nature Singapore Pte Ltd.* <https://doi.org/10.1007/s11282-018-0360-x>
- Kapusuz Gencer, Z., Ozkiriş, M., Okur, A., Karaçavuş, S., & Saydam, L. (2013). The effect of nasal septal deviation on maxillary sinus volumes and development of maxillary sinusitis. *European Archives of Oto-Rhino-Laryngology : Official Journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : Affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery*, 270(12), 3069–3073. <https://doi.org/10.1007/s00405-013-2435-y>
- Karatas, D., Koc, A., Yuksel, F., Dogan, M., Bayram, A., & Cihan, M. C. (2015). The effect of nasal septal deviation on frontal and maxillary sinus volumes and development of sinusitis. *Journal of Craniofacial Surgery*, 26(5), 1508–1512. <https://doi.org/10.1097/SCS.0000000000001809>
- Kenjono, W.A. 2004. Rinosinusitis : Etiologi dan patofisiologi dalam naskah lengkap perkembangan terkini diagnosis dan penatalaksanaan rinosinusitis. Bagian ilmu kesehatan THT FK Unair / RSU Dr. Soetomo : Surabaya. 1-16.
- Kim J, Song SW, Cho JH, Chang KH, Jun BC (2010) Comparative study of the pneumatization of the mastoid aircells and paranasal sinuses using three-dimensional reconstruction of computed tomography scans. *Surg Radiol Anat* 32:593–599
- Klein JC (1986) Nasal respiratory function and craniofacial growth. *Arch Otolaryngol Head Neck Surg* 112:843–849
- Kucybala, I, et al. (2017) Nasal Septal Deviation and Concha Bullosa- Do They Have an Impact on Maxillary Sinus Volumes and Prevalence of Maxillary Sinusitis. Poland. *Pol. J Radiol.*, 82: 126-133, <https://doi.org/10.12659/PJR.900634>
- Lipson, S. A. (2006). MDCT and 3D workstations: a practical guide to guide and teaching file. New York. Springer.
- Lund VJ. 1997. Anatomy and Physiology of the Nasal Cavity and Paranasal Sinuses in Rhinitis: Immunopathology and Pharmacotherapy. Birkhauser Verlag, Switzerland.

- Luong A., Marple B.F. 2006. Sinus Surgery : Indications and Techniques. Clinical Reviews in Allergy & Immunology. Vol. 30 : 217-222
- Mackay, I.S., Bull, 1998. The nasal Septum . In: Otolaryngology. Editor Alan G Kerr. 7<sup>th</sup> ed. Mosby. 62-6.
- Mafee M.F, Chow M.J, Meyers R. 1993. Functional Endoscopic Sinus Surgery: Anatomy, CTScreening, Indications, and Complications. AJR: 734-744
- Maqbool, M., & Maqbool, S. (2007). *Textbook of Ear, Nose and Throat Diseases*. Eleventh edition. Brothers Jaypee Ltd. Medical Publishers (P). New Delhi
- Mulyarjo (2004) Diagnosis klinik rinosinusitis. Dalam : Naskah lengkap perkembangan terkini diagnosis dan penatalaksanaan rinosinusitis. Surabaya. Bagian ilmu kesehatan THT FK Unair /RS Dr. Soetomo. Hal. 17-24
- Mulyarjo. 2004. Diagnosis klinik rinosinusitis. Dalam : Naskah lengkap perkembangan terdini diagnosis dan penatalaksanaan rinosinusitis. Bagian Ilmu Kesehatan THT FK UNAIR / RS Dr. Soetomo: Surabaya. 17-24
- Nacleiro. M. R. 1999. Rhinitis. In : Mechanism and Management Rhinitis: Newyork.
- Netter, Frank H, 2014, Atlas of Human Anatomy. Ed 6. United states : Elsevier.
- Orhan, I., Ormeci, T., Urger, E., Aydin, S., et al (2013). *Morphometric analysis of the maxillary sinus in patients with nasal septum deviation*. Eur Arch Otorhinolaryngol, DOI 10.1007/s00405-013-2617-7.
- Osguthorpe, J. D. (2001). Adult rhinosinusitis: Diagnosis and management. *American Family Physician*, 63(1), 69–76.
- Paulsen, F., & Waschke, J. (2014). Sobotta, Atlas Anatomi Manusia Jilid 3 : Kepala Leher dan Neuroanatomi. Penerbit Buku Kedokteran EGC.
- Prasanna, L. C., & Mamatha, H. (2010). The Location of Maxillary Sinus Ostium and Its Clinical Application. *Indian Journal of Otolaryngology and Head and Neck Surgery*, 62(4), 335–337. <https://doi.org/10.1007/s12070-010-0047-z>

- Reddy U.D., Dev B. 2012. Kapusuz Gencer,Pictorial essay: Anatomical variations of paranasal sinuses on multidetector computed tomography-How does it help FESS surgeons?. Indian Journal of Radiology and Imaging Vol 22 : 317-325
- Reddy, N., Shamkuwar, S., & Mokhasi, V. (2019). Anatomy of the Maxillary Sinus Ostium: a Cadaveric Study. *International Journal of Anatomy and Research*, 7(4.2), 7097–7100. <https://doi.org/10.16965/ijar.2019.313>
- Rubin G.D., 2014. Computed Tomography: Revolutionizing the Practice of Medicine for 40 Years. RSNA vol. 273 :546-574
- Saccucci M, Cipriani F, Carderi S, Di Carlo G, D'Attilio M, Rodolfino D, et al. Gender assessment through threedimensional analysis of maxillary sinuses by means of cone beam computed tomography. *Eur Rev Pharmacol Sci.* 2015;19:185–93
- Sadler, T. W. (2006) *nacleir's Medical Embryology*. Lippincott Williams & Wilkins. Volume 1. 371.
- Sapmaz, E., Kavakli, A., Sapmaz, H. I., & Ogeturk, M. (2018). Impact of Hard Palate Angulation Caused by Septal Deviation on Maxillary Sinus Volume. *Turk Otolarengoloji Arsivi/Turkish Archives of Otolaryngology*, 56(2), 75–80. <https://doi.org/10.5152/tao.2018.2987>
- Soetjipto D, Mangunkusumo E, Wardani RS. Hidung ; Sinusitis. Dalam: Soepardi E, Iskandar N, Bashirudin J, Restuti RD. Buku Ajar Ilmu Kesehatan Telinga Hidung, tenggorok, kepala dan leher. Edis ke-4, Fakultas kedokteran Universitas Indonesia. Gaya baru. Jakarta. 2007.
- Som M. Peter. 2003. Anatomy and Physiology in Head and Neck Imaging. Fourth Edition. Mosby, Inc. St. Louis, Missouri. 87-9
- Souza, A. D., Rajagopal, K. V, Ankolekar, V. H., Souza, A. S. D., & Kotian, S. R. (2016). *Anatomy of maxillary sinus and its ostium : A radiological study using computed tomography.* 37–40. <https://doi.org/10.4103/2348-3334.172397>
- Stanojkovic, V. 2010. Correlation Between Computed tpmography and intraoperative finding In Functional Endoscopic Surgery of Nose and paranasal Sinuses. Departement of Otorhynolaryngology General Hospital Izola, Slovenia : 19-26
- Teke HY, Duran S, Canturk N, Canturk G. Determination of gender by measuring the size of the maxillary sinuses in computerized tomography scans. *Surg Radiol Anat.* 2007;29:9–13.

Walsh, W.E., Kern, R.C. 2006. Sinonasal anatomy, function and evaluation.  
In: Bailey BJ, Johnson JT, editors. Head and neck surgery  
otolaryngology. 1397 – 1401.



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN  
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### REKOMENDASI PERSETUJUAN ETIK

Nomor : 411/UN4.6.4.5.31/ PP36/ 2020

Tanggal: 10 Agustus 2020

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH20080342	No Sponsor Protokol	
Peneliti Utama	dr. Orpa Seri ,	Sponsor	
Judul Peneliti	Hubungan Deviasi Septum Nasi Dengan Volume Sinus Maxillaris dan Letak Ostium Sinus Maxillaris Pada Pasien Yang dilakukan Pemeriksaan MSCT Scan Sinus Paranasalis		
No Versi Protokol	1	Tanggal Versi	4 Agustus 2020
No Versi PSP		Tanggal Versi	
Tempat Penelitian	RS Universitas Hasanuddin Makassar		
Jenis Review	<input checked="" type="checkbox"/> Exempted <input type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal	Masa Berlaku 10 Agustus 2020 sampai 10 Agustus 2021	Frekuensi review lanjutan
Ketua Komisi Etik Penelitian Kesehatan FKUH	Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)	Tanda tangan 	
Sekretaris Komisi Etik Penelitian Kesehatan FKUH	Nama dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K)	Tanda tangan 	

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 jam dan dilengkapi dalam 7 hari dan Lapor SUSAR dalam 72 jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari protokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan

Lampiran 2

**REKAPITULASI DATA SAMPEL PENELITIAN**  
**HUBUNGAN DEVIASI SEPTUM NASI TERHADAP VOLUME SINUS MAXILLARIS**  
**DAN LETAK OSTIUM SINUS MAXILLARIS PADA PASIEN YANG DILAKUKAN**  
**PEMERIKSAAN MSCT SCAN SINUS PARANASALIS**

NO	Nama	Umur	JK	Arah deviasi	Derajat deviasi	Volume sinus maxillaris		Jarak ostium		Letak ostium	
						Kanan	Kiri	Kanan	Kiri	Kanan	Kiri
1	Winda	20	2	1	1	14.52	14.76	2.3	2.4	2	2
2	Hardinal	23	1	2	2	29.72	24.13	4	3.9	1	1
3	Wira	23	1	1	3	12.77	15.77	2.73	2.44	2	2
4	Nicholas	25	1	2	3	29.07	26.94	4.25	4.3	1	2
5	Ekawati	26	2	1	2	24.08	24.41	3.9	3.39	1	1
6	Tahari	37	1	1	3	25.44	25.97	3.27	2.96	2	3
7	Betzy	22	2	2	2	8.72	15.59	2	2.69	1	1
8	Helena	64	2	1	2	20.59	19.81	2.81	2.77	3	3
9	Kombongan	43	1	2	3	17.62	8.82	3.26	2.94	1	1
10	Miftaful	21	2	2	1	25.77	26.65	3.39	3.39	3	3
11	Rahmi	38	2	2	1	14.25	16.24	2.77	2.77	2	2
12	Nabigha	25	2	1	1	10.7	13.4	1.82	2.23	2	2
13	Muh. Asraf	44	1	1	3	16.57	17.79	3.65	3.41	1	1
14	Suryadi	57	1	1	2	9.43	18.12	1.87	3.12	2	2
15	Nurul	23	2	1	1	16.02	15.08	2.56	2.11	1	3
16	Sakinah	31	2	2	2	14.67	15.68	2.39	2.61	3	2
17	Wardillah	33	2	1	3	3.16	1.83	1.83	1.74	1	1
18	Nirwana	25	2	2	2	15.96	18.72	2.88	3.01	2	3
19	Andriani	22	2	1	3	12.64	14.99	2.64	2.69	1	2
20	Deni	20	1	1	1	27.02	27.51	3.18	2.68	3	2
21	Dwi	22	2	1	1	12.8	18.29	2.05	2.75	1	1
22	Christina	25	2	2	1	18.37	17.04	3.02	3.22	3	2
23	Kamaruddin	33	1	1	2	18.98	19.65	3.22	2.52	1	1
24	Nurdin	61	1	2	1	26.97	24.6	3.75	3.28	2	2
25	Tjonde	77	1	1	1	19.68	21.46	3.45	3.71	2	2
26	Suhartini	40	2	2	3	18.23	16.82	2.8	2.98	2	2
27	Sartika	46	2	1	2	17.12	17.32	2.45	2.98	1	1
28	Ruth Yanti	29	1	2	3	18.61	16.13	3.62	3.45	1	1
29	Iyan	35	1	2	2	20.41	12.8	2.72	2.29	3	2
30	Hendra	29	1	1	2	21.61	18.62	3.47	3.38	2	2
31	Yermia	25	1	1	2	25.16	27.19	2.98	3.76	2	1
32	Asyraf	30	1	2	3	20.55	15.69	3.63	3.23	1	1
33	Dolvice	50	2	2	1	11.52	14.87	2.38	2.72	1	2
34	Suryani	39	2	1	3	9.49	13.1	2.95	3.25	2	2
35	Luthfy	38	1	2	1	26.85	26.57	4.07	4.16	2	2

## Lampiran 2

36	A. Syamsu	44	1	2	1	21.33	20.17	3.85	3.81	2	2
37	Restika	31	2	1	2	17.99	19.07	2.64	2.85	2	2
38	Dian	23	2	1	2	8.49	9.12	2.35	2.31	2	2
39	Hartono	31	1	1	2	17.27	18.33	2.78	3.14	1	2
40	Haslinah	39	2	2	3	20.98	18.75	3.39	3.02	2	2
41	Yusri	38	1	1	3	20.48	37.91	4.14	4.32	2	2
42	A. Aksar	34	1	1	1	17.11	18.53	3.13	3.56	2	2
43	Haslinda	61	2	1	1	12.8	13.6	2.52	3.12	1	1
44	Sofiah	47	2	1	1	18.34	17.12	2.83	2.76	2	2
45	Nizar	25	1	1	1	17.34	18.43	2.72	2.81	2	2
46	Ronny	29	1	2	2	22.21	24.6	3.44	3.36	1	1
47	Mulyana A.	23	1	1	1	18.52	17.21	2.73	2.75	2	1
48	Gustiawati	43	2	2	2	20.42	18.08	3.18	3.02	1	1
49	Yusnaeni	37	2	1	1	17.18	18.36	3.23	3.56	2	1
50	Zulfikar	67	1	2	3	18.72	16.17	3.56	3.41	1	1
51	Helmi	35	1	2	2	23.2	25.63	3.61	3.61	1	1
52	Indra	48	1	2	3	15.98	12.15	2.78	2.89	1	1

## **CURRICULUM VITAE**

### **A. Data Pribadi**

Nama : dr. Orpa Seri  
Tempat/Tanggal Lahir : Sarira / 07 Oktober 1979  
Alamat : Jl. Sunu, Komp. UNHAS, Blok R No.5  
Agama : Katolik  
Ayah : Yosafat Sesa Bubun  
Ibu : Yustina Pabarrungan  
Saudara Kandung : Nety Parisa  
Pidelis Parinding  
Mince Bunga  
Dorce Mani  
Yulita Parinding

### **B. Riwayat Pendidikan**

- SD : SDN 213 Inpres Lemo, lulus tahun 1992
- SMP : SMP Katolik Makale, lulus tahun 1995
- SMA : SMU Katolik Makale, 1998
- Pendidikan Dokter : Fakultas Kedokteran Universitas Hasanuddin Makassar angkatan 1998, lulus tahun 2006
- PPDS : Departemen Radiologi Fakultas Kedokteran Universitas Hasanuddin Periode Juli 2015

### **C. Riwayat Pekerjaan**

- PNS : Tahun 2010 – sekarang pada Dinas Kesehatan Kabupaten Toraja Utara, Sulawesi Selatan

### **D. Karya Ilmiah / Artikel yang dipublikasikan**

-

### **E. Makalah pada seminar / Konferensi Ilmiah Nasional dan Internasional**

- *Schwannoma of The Upper Limb*, dibawakan pada acara Pertemuan Ilmiah Tahunan Persatuan (PERAMI), Semarang, September 2018

