

UDAYANA UNIVERSITY PRESS



PROCEEDING BOOK

**KONGRES NASIONAL
PERHIMPUNAN DOKTER SPESIALIS
RADIOLOGI INDONESIA (PDSRI) XIII**

Emergency Radiology: Diagnosis & Therapeutic

Hotel The Stones Legian, Bali
13-15 Desember 2018

EDITOR :

Elysanti Dwi Martadianj, Vonny N. Tubagus, Anastasia Tjan



PROCEEDING BOOK

**KONGRES NASIONAL
PERHIMPUNAN DOKTER SPESIALIS
RADIOLOGI INDONESIA (PDSRI) XIII**

Emergency Radiology : Diagnosis & Therapeutic

**Hotel The Stones Legian, Bali
13-15 Desember 2018**

Editor :

**Dr.dr Elysanti Dwi Martadiani, Sp.Rad(K)MSK
dr. Vonny N. Tubagus, SpRad(K)RI
dr. Anastasia Tjan**



UDAYANA UNIVERSITY PRESS

2018

Undang-Undang Republik Indonesia Nomor 28 Tahun 2014 Tentang Hak Cipta

Lingkup Hak Cipta

Pasal 1

1. Hak Cipta adalah hak eksklusif pencipta yang timbul secara otomatis berdasarkan prinsip deklaratif setelah suatu ciptaan diwujudkan dalam bentuk nyata tanpa mengurangi pembatasan sesuai dengan ketentuan peraturan perundang-undangan.

Ketentuan Pidana

Pasal 113

1. Setiap Orang yang dengan tanpa hak melakukan pelanggaran hak ekonomi sebagaimana dimaksud dalam Pasal 9 ayat (1) huruf l untuk Penggunaan Secara Komersial dipidana dengan pidana penjara paling lama 1 (satu) tahun dan / atau pidana denda paling banyak Rp. 100.000.000,00 (seratus juta rupiah).
2. Setiap Orang yang dengan tanpa hak dan / atau tanpa izin Pencipta atau pemegang Hak Cipta melakukan pelanggaran hak ekonomi Pencipta sebagaimana dimaksud dalam Pasal 9 ayat (1) huruf c, huruf d, huruf f, dan / atau huruf h untuk Penggunaan Secara Komersial dipidana dengan pidana penjara paling lama 3 (tiga) tahun dan / atau pidana denda paling banyak Rp. 500.000.000,00 (lima ratus juta rupiah).



PROCEEDING BOOK

**KONGRES NASIONAL
PERHIMPUNAN DOKTER SPESIALIS
RADIOLOGI INDONESIA (PDSRI) XIII**

Emergency Radiology : Diagnosis & Therapeutic

**Hotel The Stones Legian, Bali
13-15 Desember 2018**

Editor :

**Dr.dr Elysanti Dwi Martadiani, Sp.Rad(K)MSK
dr. Vanny N. Tubagus, SpRad(K)RI
dr. Anastasia Tjan**

Diterbitkan oleh:

**UDAYANA UNIVERSITY PRESS
Kampus Universitas Udayana Denpasar,
Jl. P.B. Sudirman, Denpasar - Bali Telp. (0361) 9112762
unudpress@gmail.com http://penerbit.unud.ac.id**

Cetakan Pertama:

2018, xx + 314 hlm, 14,8 x 21 cm

ISBN: 978-602-294-323-5

Hak Cipta pada Penulis.

Hak Cipta Dilindungi Undang-Undang :

**Dilarang mengutip atau memperbanyak sebagian atau seluruh isi buku ini
tanpa izin tertulis dari penerbit.**



KONGRES NASIONAL (KONAS) PDSRI XIII

KATA PENGANTAR

Segala puji syukur senantiasa kita panjatkan ke hadirat Tuhan Yang Maha Esa, yang telah melimpahkan rahmat dan berkah-Nya kepada kita semua sehingga kali ini kita dapat mengadakan acara Konas PDSRI 2018 yang bertema Emergency Radiology: Diagnostic and Therapeutic.



Radiologi memainkan peran penting sebagai mendiagnosis bagi departemen lain dalam hal kasus-kasus kegawatan yang mempengaruhi tatalaksana pasien yang sangat berpengaruh terhadap tingkat morbiditas dan mortalitas. Perkembangan ilmu kedokteran dan teknologi yang sangat progresif mengharapkan agar kita lebih beradaptasi dalam membantu diagnosis para klinisi maupun terapi. Pada acara ini, kita memiliki kesempatan untuk berbagi informasi tentang berbagai modalitas imaging dalam menunjang diagnosis hingga memberikan penatalaksanaan dalam kasus-kasus emergensi.

Seminar Nasional ini dapat terselenggara berkat bantuan dari berbagai pihak. Untuk itu pada kesempatan ini ijin kami mengucapkan terima kasih kepada Ketua PDSRI Indonesia, Ketua PDSRI Cabang Bali, pembicara dan peserta seminar atas partisipasinya, serta pihak lain yang tidak dapat kami sebutkan satu persatu. Penghargaan yang setinggi-tingginya kami sampaikan kepada segenap panitia yang telah bekerja keras demi suksesnya kegiatan ini. Selain itu kami persilakan para peserta dapat menikmati keindahan dan keagungan pulau Bali, yang mendunia diwaktu senggang maupun setelah acara KONAS ini berlangsung.

Akhir kata semoga peserta seminar mendapatkan manfaat yang besar dari kegiatan ini sehingga mampu mengaplikasikan ilmu yang didapat

Terima kasih.

**dr. Firman Sitanggang, SpRad(K)RI
Ketua Panitia**



KATA SAMBUTAN

Selamat pagi dan salam sejahtera bagi kita semua. Saya selaku ketua PDSRI mengucapkan selamat datang bagi para pembicara dan peserta dalam rangka Kongres Nasional Perhimpunan Dokter Spesialis Radiologi Indonesia yang diadakan di Hotel The Stones, Bali pada tanggal 13 hingga 15 Desember 2018.



Tema yang diangkat kali ini adalah Emergency Radiology: Diagnostic and Therapeutic. Kami harap acara ini dapat bermanfaat bagi kita semua, dapat memberikan pengalaman dan perkembangan keilmuan kepada seluruh rekan sejawat radiologi dalam menjawab tantangan profesi khususnya di bidang emergensi radiologi. Perkembangan dalam bidang radiologi sangat cepat baik untuk mendiagnosis kasus emergensi dan penggunaan radiologi intervensional minimal-invasif baik vaskuler maupun non-vaskuler. Topik-topik ini sangat penting agar kita sebagai radiolog tetap up to date dan mengembangkan diri dengan peningkatan kebutuhan serta perkembangan teknologi kedokteran terbaru yang dinamis dan selalu berubah.

Tak lupa kami mengucapkan terima kasih kepada para pembicara, panitia dan seluruh peserta yang telah bersedia meluangkan waktu untuk hadir. Selamat bersilaturahmi, belajar, mengingat kembali sekaligus menikmati keindahan pulau Bali.

Akhir kata semoga kita semua mendapatkan manfaat yang besar dari kegiatan KONAS kali ini.

Terima kasih

Mayjend TNI. Dr. Terawan Agus Putranto, Sp.Rad (K)RI
Ketua PDSRI



SUSUNAN PANITIA

Penasihat	Ketua PDSRI Pusat Ketua PSRII Ketua PDSRI Cabang Bali
Ketua Panitia	dr. Firman P. Sitanggang, SpRad(K)RI
Wakil Ketua	dr. Made Dwija Ayusta Putra, SpRad
Sekretaris	dr. Vonny N. Tubagus, SpRad(K)RI
Wakil Sekretaris	dr. Ni Nyoman Margiani, SpRad(K)RA
Bendahara	dr. Nikmatia Latief, SpRad(K)RI
Koordinator Sie Ilmiah	dr. Baskoro Nurdopo, SpRad(K)RI DR.dr. Elysanti Dwi Martadiani, SpRad(K)MSK Dr. Made Widhi Asih, Sp.Rad(K)N- KL
Koordinator Sie Acara	Dr. Putu Patriawan, Sp.Rad(K)RI Dr. P. P Yuli Anandasari, Sp.Rad(K)RA
Koordinator Sie Dana	Dr. Ardianto, Sp.Rad(K)RI Dr. Samuel Tandinugroho, Sp.Rad(K)RI



Koordinator Sie Publikasi Dr. Baskoro Nurdopo, Sp.Rad(K)RI
 Dr. Eppy Buchori, Sp.Rad(K)RI

Koordinator Sie
Perlengkapan/Transportasi Dr. Dewa Gde Mahiswara S, Sp.Rad

Sekretariat Indah Kartika



DAFTAR PEMBICARA

Workshop Speaker / Instructor

- Moh. Rizal (Malaysia)
- DR.dr. Arman A. Abdullah, SpRad(K) RI
- dr. AH Soewandi, SpRad(K) RI
- dr. Budianto, SpRad (K) RI
- dr. Elvita Daulay, SpRad(K) RI
- dr. Ardianto, SpRad(K) RI
- dr. Pramlim Gunawan, SpRad(K)RI
- dr. Lailatul Muqmiroh, SpRad(K) RI
- dr. Samuel Tandionugroho, SpRad (K) RI
- dr. Hilman, SpRad(K) RI
- dr. Bayhaqi, SpRad (K) RI
- dr. Prasetyo Sarwono Putra, SpRad(K) RI
- dr. Endang Dradjat, SpRad (K) RI
- dr. Donny Sullivan SpRad(K) RI
- dr. Agus Darwiyanto, SpRad(K) RI
- dr. Ardhi Kasaba, SpRad (K) RI
- dr. Ira Safitri, SpRad(K) RI

Seminar Speaker

- dr. Firman P. Sitanggang, SpRad (K) RI
- Mayjen TNI Dr. dr. Terawan A. Putranto, SpRad (K) RI
- Ketua PB IDI/Ketua IDI Wilayah Bali
- Prof. dr. Arif Faisal, SpRad (K)
- Prof. Dr. Wila Chandrawila, SH
- Dr. dr. Lina Choridah, SpRad (K) PRW
- dr. Nurhayati, SpRad (K)PRW
- dr. Tri Wulan Handarini, SpRad (K)PRW
- dr. Rosalina SpRad(K) RN
- dr. Indrastuti Normahayu, SpRad(K) RA
- Prof. Dr. dr. Bambang Suprijanto, SpRad (K)RA
- Prof. Dr. dr. Ristianah D. Soetikno, SpRad (K) RA
- dr. Eddy Sudijanto, SpRad (K) RA
- dr. Harry Galuh, SpRad (K)) RA
- Prof. Dr. dr. Triyono KSP, SpRad (K) RI



- dr. Farhan Anwary , SpRad (K)N-KL , MH-Kes
- dr. dr. Arman A. Abdullah, SpRad (K) RI
- dr. Hartono Yudi Sarastika, SpRad(K) RI
- dr. Pramlim Gunawan, SpRad(K) RI
- dr. Budiando, SpRad(K) RI
- dr. Barkoro Nurdopo, SpRad (K) RI
- dr. Paulus Rahardjo, SpRad (K) MSK
- Dr. dr. Elysanti Dwi Martadiani, SpRad (K) MSK
- Dr. dr. Marcel Prasetyo, SpRad(K) MSK
- Dr. dr. Hermina Sukaningtyas, SpRad(K) MSK
- Dr. dr. Undang Ruhimat, SpRad(K) MSK
- Prof. Dr. dr. Bachtiar Murtala, SpRad (K) Abd
- dr. Evo Elidar, SpRad (K) Abd
- dr. Budi Laraswati, SpRad (K) Abd
- dr. Nyoman Sri Laksmningsih, SpRad(K)Abd
- dr. Daniel Makes, SpRad (K) Abd
- Prof. dr. Benny Huwae, SpRad (K) N-KL
- dr. Sri Andreani, SpRad (K)N-KL
- Dr. dr. Anggraeni DS, SpRad (K)N-KL
- Prof. Dr. dr. Yuyun Yueniwati, Mkes, SpRad (K)N-KL



SUSUNAN ACARA

Kamis, 13 Desember 2018

08.00 – 17.00	<i>Workshop Interventional Radiology</i> Lokasi : Gedung Bitdec, Tanah Lot-Bali
13.00 – 22.00	Sidang Organisasi PDSRI Lokasi : The Stone Hotel Ballroom

Jumat, 14 Desember 2018 : The Stone Hotel Ballroom

07.30 – 08.00	Re-registrasi	
08.00 – 08.30	<i>Opening Ceremony</i>	
	Kata Sambutan Ketua Panitia	Dr. Firman. P.S, Sp.Rad(K)RI
	Kata Sambutan Ketua PDSRI	Mayjen TNI DR. dr. Terawan A. Putranto, SpRad (K) RI
	Kata Sambutan : Ketua IDI	Ketua PB IDI/Ketua IDI Wilayah Bali
	Opening Speech Bali Governors	
	<i>Plenary Lecture:</i>	
	<i>Chairperson</i> : Prof.dr. Arif. Faisal, Sp.Rad(K)	
08.30 – 09.00	Tanggung Jawab Hukum Kedokteran	Prof. dr. Wila Chandrawila, SH
09.00 - 09.30	Sistem JKN dalam Pelayanan Radiologi	KEMENKES
09.30 – 10.00	<i>Sponsorship</i>	To be announced



IMAGING OF HEAD AND NECK EMERGENCIES

Oleh: Dr. dr. Anggraini DS, SpRad (K)N-KL

Department of Radiology, Medical Faculty, Airlangga Hospital, Surabaya

ABSTRACT

Introduction

Emergency is conditions that are life threatening, causing loss of function, incite severe pain or distress, or any situation that can lead to the aforementioned conditions if not identified early or acted on quickly. Head and neck considered as part of the body that contain various vital delicate anatomy, it takes little imagination to see how just about any acquired abnormality of the head or neck has the potential for being declared an emergency on presentation.

The anatomy of the head and neck contains very few structures that could be considered expendable and, consequently, is exceptionally intolerant to infection, inflammation, and injury. Many emergent processes within the cervical region also need to be considered for their possible impact on structures within the head and chest, into which there are many routes for potential communication.

Imaging Protocols

On emergency setting, CT is imaging technique of choice because of its rapid image acquisition and superior delineation of the airway and osseous structures. There are some protocols that need to be done for emergency CT Scan:

- Axial + coronal planes; thin-sections (~2mm), multi slice acquisition
- Soft tissue algorithm
- Contrast for masses or inflammatory disease
- Non contrast only when in conjunction with MR



Emergencies of The orbits

1. Penetrating Orbital Injury

Penetrating orbital injury usually implies 2 types of major consequences that require intervention:

- Direct injury to the intra-orbital soft tissue structures
- Retention of an intra-orbital foreign body

For the penetrating orbital injury there are some signs that need to be noted:

- a. Presence of intraorbital air, particularly if it is seen within extraocular musculature or within globe
 - b. Air focal, linear configuration, associated with intraorbital hematoma or foreign body
 - c. Excessive trapped retrobulbar air can result in a tension pneumo-orbit in which there is proptosis
 - d. Stretching optic nerve
 - e. Tenting posterior globe
 - f. Injury to the lateral canthal region
- Evaluation of the lacrimal gland, should be symmetric as well as homogeneous in CT attenuation and enhancement pattern
- g. Focal fluid collections or linear hypo enhancing areas within the lacrimal gland are concerning for laceration
 - h. Contrast enhancement may also facilitate the detection of partial-thickness lacerations through the extra ocular muscle bellies
 - i. The presence of a radiopaque foreign body in any of these locations suggests a penetrating injury until proven otherwise.

2. Orbital Roof and Blow-In Fractures

Fracture of the orbital roof is more common in children. On adult, it's usually associated with frontal sinus and skull base fracture, dural tears, intracranial hemorrhage and meningoencephalocele.



Blow-in fractures is a condition when orbital roof fractures demonstrate inferior displacement of fracture fragments into the soft tissue.

3. Orbital Cellulitis

Preseptal cellulitis can represent local progression of a preceding skin or eyelid condition, such as blepharitis, furuncles, or other adjacent cutaneous infection. It is usually unilateral and presents as marked induration, tenderness, and erythema of the eyelid, sometimes seen in association with a stye.

In preseptal cellulitis, the radiologic findings will closely follow the clinical presentation, with marked thickening of the eyelid and adjacent superficial soft tissues as well as requisite sparing of the postseptal soft tissues. In severe cases, it may be possible to discern small fluid collections and microabscesses forming within the eyelid, which further secures the diagnosis. When evaluating the orbits, especially if preseptal cellulitis is suspected, close attention should be paid to the paranasal sinuses and nasolacrimal complex because infection and obstruction of these structures may incite edema within the preseptal soft tissues that masquerades as true cellulitis.

The key imaging feature of postseptal cellulitis is stranding of the intraorbital fat, which represents a combination of edema, vascular congestion, increased microvascular permeability, and inflammatory infiltrates.

4. Non Infectious Orbital Inflammation

Inflammatory changes to the postseptal soft tissues are not necessarily specific on imaging in condition when intraorbital abscess or other clear evidence of orbital infection absence. Imaging play a role in identifying the presence of an inflammatory process and helping determine which of the intraorbital structures are involved.



Intraorbital inflammatory changes may also encompass a larger set of structures that are related by a shared anatomic region, such as the entire anterior orbit (anterior orbital pseudotumor) and within the orbital apex (orbital apex inflammatory syndrome). All of these orbital inflammatory conditions may be considered part of a larger set of inflammatory diseases, collectively referred to as idiopathic orbital inflammatory syndrome, or sometimes orbital pseudotumor given their tendency to cause mass effect and non-neoplastic mass like expansion of the native intraorbital structures.

Emergencies of the Sinonasal Cavity

a. Acute Bacterial Sinusitis

There are some sinonasal disease such as maxillary dentition, vice versa; thickening of the mucosa; submucosal edema; and intraluminal secretions. Several conditions usually need to be met in order for an acute bacterial sinusitis to develop; impairment of normal sinus drainage provides an opportunity for bacteria to establish themselves within the sinus cavity and is usually the result of multiple factors, including obstructed sinus drainage pathways and ostia, abnormal sinonasal mucosa, decreased mucociliary clearance, and abnormal consistency of sinus secretions. Impaired immune function is an additional risk factor for both bacterial and fungal sinus infections.

The severity and pattern of these findings are not entirely specific to acute bacterial infection can be observed in both chronic and nonbacterial disease. Air fluid levels are lacking in complete specificity but considered as an important sign for identifying acute bacterial sinusitis. Identification of sinonasal disease should prompt inspection of the dentition just as identification of intraorbital disease should prompt inspection of the sinuses (the inverse is also true).

b. Acute Invasive Fungal Sinusitis

In case of diagnose of acute invasive fungal sinusitis, major preexisting medical problems needed to being aware before making the diagnosis such as AIDS, organ transplantation, systemic neoplasms, and chemotherapy recipients.



An invasive fungal sinusitis can share features with other forms of sinusitis, including T2 hyperintense mucosa that is thickened and enhancing. Fungal infection should be suspected in the presence of debris that is T2 hypointense and restricts diffusion.

On early invasion, it is often conducted in along small traversing vessels of the skull base and then spread into the intracranial space via natural foramina. Look for areas of hypo enhancement on imaging because these areas usually indicate necrotic non perfused tissue. On case of aggressive disease process, there is osseous destruction, T2 hypointensity, and restricted diffusion on DWI.

c. Epistaxis: Hemoptysis

In case of high volume and recurrent epistaxis is more likely to be caused by:

- Benign and malignant neoplasms,
- accidental and iatrogenic trauma,
- granulomatous disease,
- Vascular malformations (both acquired and hereditary),
- and acute sinusitis (bacterial or fungal)

In the region of the anterior nasal cavity, 2 important anastomotic sites should be considered. The first region is between the dorsal nasal artery and angular artery at the level of the medial canthus, sometimes referred to as the orbital point. The second region is between the superior labial artery and the anterior ethmoidal artery, at the level of the columella.

Referensi

1. Cunnane ME, Sepahdari A, Gardiner M, et al. Pathology of the eye and orbit. In: Som PM, Curtin HD, editors. Head and neck imaging. 5th edition. St Louis (MO): Mosby; 2011. p. 601–3.
2. LeBedis CA, Sakai O. Nontraumatic orbital conditions: diagnosis with CT and MR imaging in the emergent setting. *Radiographics* 2008;28:1741–53.
3. Sepahdari AR, Aakalu VK, Kapur R, et al. MRI of orbital cellulitis and orbital abscess: the role of diffusion-weighted imaging. *AJR Am J Roentgenol* 2009;193:W244–50.



4. Tovilla-Canales JL, Nava A, Tovilla y Pomar JL. Orbital and periorbital infections. *Curr Opin Ophthalmol* 2001;12:335–41.
5. Brucker, J. L., & Gentry, L. R. (2015). Imaging of Head and Neck Emergencies. *Radiologic Clinics of North America*, 53(1), 215–252.
6. Uehara F, Ohba N. Diagnostic imaging in patients with orbital cellulitis and inflammatory pseudotumor. *Int Ophthalmol Clin* 2002;42:133–42
7. Yuen SJ, Rubin PA. Idiopathic orbital inflammation: distribution, clinical features, and treatment outcome. *Arch Ophthalmol* 2003;121:491–9.
8. Kapur R, Sepahdari AR, Mafee MF, et al. MR imaging of orbital inflammatory syndrome, orbital cellulitis, and orbital lymphoid lesions: the role of diffusionweighted imaging. *AJNR Am J Neuroradiol* 2009;30: 64–70.