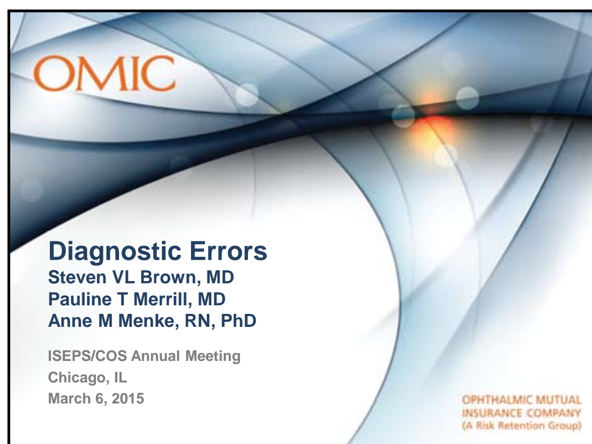

Diagnostic Errors

Steven VL Brown, MD
Pauline T Merrill, MD
Anne M Menke, RN, PhD

ISEPS/COS Annual Meeting
Chicago, IL
March 6, 2015

Audience response question #1

- What percentage of malpractice claims in the OMIC study were due to diagnostic error?
  1. 5%
  2. 12%
  3. 20%
  4. 24%

Audience response question #2

- What condition led to the most failure to diagnose ophthalmic malpractice claims?
  1. Glaucoma
  2. Giant cell arteritis
  3. Retinal detachment
  4. Corneal infection

Audience response question #3

- What factor contributed the most to diagnostic errors?
  1. Atypical presentations
  2. Physicians' cognitive processes
  3. Failure to follow up on test results
  4. Poor communication among healthcare providers

Diagnostic Error

- A diagnosis that is "missed, wrong, or delayed, as detected by some subsequent definitive test or finding."

- Graber M. Diagnostic Errors in Medicine: A Case of Neglect. *Comm J Qual Patient Saf* 2005; 31: 106-13.

Prevalence of diagnostic error

- Estimated by experts to be 10-15% of all care

- Graber ML et al. Cognitive interventions to reduce diagnostic error: a narrative review *BMJ Qual Saf* 2012; 21: 535-557.

Frequency of malpractice claims alleging diagnostic errors

- Most frequent type of malpractice claim in the US (all physicians)
- Highest frequency (29%), severity, and harm in analysis of 25 years of claims reported to the National Practitioner Data Bank
- 20% of claims in analysis of 23,527 claims in CRICO data sharing project

OMIC 7

Diagnostic Error OMIC Database

- OMIC's Claims Committee noted an increasing number of diagnostic error cases, referred to Risk Management
- We are conducting an analysis of all such claims over the last 10 years (in progress)
- Will present glaucoma and retina data from last 7 years today

OMIC 8

Diagnostic Error Frequency: 2008-2104

- 198 claims/166 plaintiffs
- 12% claims 2008-2014
- **RD = 29% overall, 70% retina claims**

OMIC 9

Diagnostic Error Indemnity Payments

	OMIC Overall	Diagnostic Errors	Retina	Glaucoma
% Paid	19%	33%	30%	50%
Range	$1600-$2,000,000	$1600-$2,000,000	$1600-$1,500,000	$10,000-$500,000
Median (Middle)	$125,000	$175,000	$200,000	$50,000
Mean (Average)	$199,347	$318,245	$320,316	$139,900

OMIC 10

OMIC

Steven VL Brown, MD, FACS

Chair, Underwriting Committee
Member, Risk Management Committee

OPHTHALMIC MUTUAL INSURANCE COMPANY (A Risk Retention Group)

Failure to Diagnose Glaucoma - Case #4

Medical facts:

7-8-08:
- Dr. S. examined 50-year-old female with chief complaint, "droopy right upper lid with irregular pupil, right eye"
- History of chronic headaches
- Denies any anhydrosis
- Exam: Va 20/20 OU, IOP 18-19mmHg , EOM: Full
- Pupil: round after dilation, slightly irregular prior
- Lids: 1-2mm ptosis right upper lid
- Rest of exam – "normal"
- Dx: "Could have mild Horner's syndrome OD but doesn't meet all criteria"
- Plan: Observation-followup 1 year

OMIC

Failure to Diagnose Glaucoma -Case #4

“Failure to diagnose”

7-9-08

- Chief Complaint: “Slight vision changes”
- Va 20/20, IOP 18mmHg OU
- Pupil: 1-2mm slightly irregular – unchanged
- SLE: “Tear drop pupil”
  - Peripheral anterior synechiae at 12 o’clock
  - Iris atrophy temporally
- Fundus: “Unremarkable”
- Dx: “Possible Horner's with iris atrophy”
- Plan: “If it changes to be seen in followup, recheck 1 year

OMIC

Failure to Diagnose Glaucoma -Case #4

Medical Facts:

- 7-12-10: patient was a “no show”
- 8-24-11: seen by O.D.: IOP OD 48mmHg – referred
- 8-30-11: Dr. C.: Dx: ICE-Chandler’s with extensive visual field loss, right eye
- Damages: ICE syndrome with significant visual field loss, right eye

OMIC

Failure to Diagnose Glaucoma -Case #4

Plaintiff Expert

Failure to:

- Investigate/diagnose abnormal pupil and iris
- Perform diagnostic procedures to diagnose ICE
- Refer to specialist to DX/TX ICE syndrome

OMIC 15

Failure to Diagnose Glaucoma -Case #4

Defense expert: Dr. A

- Supportive: Failure to diagnose ICE “not an issue” as Tx generally supportive unless IOP rises
- Impossible to know time course of elevated IOP
- Insured had no chance to treat as did not return for followup.

OMIC

Failure to Diagnose Glaucoma -Case #4

Defense expert: Dr. B

- Not supportive: ICE syndrome missed on both exams
- Questionable Horner's diagnosis with no diagnostic testing to confirm diagnosis
- Gonioscopy/endothelium exam omitted
- Insured failed to advise significant risk of glaucoma/counseling on importance of followup e.g. in 2-4 months.

OMIC

Failure to Diagnose Glaucoma -Case #4

OMIC review:

- Obvious missed diagnosis: question as to whether if kept followup would have made diagnosis of ICE/GLC
- Failure to DX below SOC

OMIC

Failure to Diagnose Glaucoma -Case #4

SUMMARY:
- Allegation: Delayed Dx/Tx glaucoma, right eye
- Insured consent: no, but interest in settlement
- Liability statement: Probable
- Settlement value: $200,000 - $250,000
- Verdict range: $350,000 - $500,000
- % chance for defense: <50%
- Status: Case settled for $137,500

Take home point: "When it doubt, refer out!"

OMIC

Failure to Diagnose Glaucoma -Case #3

Allegation

Delay DX/TX Glaucoma

OMIC

Failure to Diagnose Glaucoma -Case #3

Medical facts

61-year-old male
- 2-19-09: Uncomplicated phaco/PC/IOL OS; Va preoperative 20/200
- 3-12-99: Uncomplicated phaco OD: Va preop 20/200: dense PSC and diffuse retinal hemorrhages noted preop
- 3-15-99: …. 3 Days Later…. POD #1 OD Va count fingers
  - Dx: CRVO with macular edema
  - Plan: FANG done same day; confirm CRVO (nonischemic)
  - FANG: Film itself "lost, misplaced" for 2 months

OMIC

Failure to Diagnose Glaucoma -Case #3

Delay Dx/Tx glaucoma, OD
- 4-19-99: Complains of "pain" for past week
  - Exam: Pupillary capture of IOL with angle closure: IOP 36
  - Tx: Medical laser
- 5-2-99: Recurrence of "capture"
  - Tx: Further laser
- 5-12-99: VA improved slightly, OD count fingers at 3 ft
- 10-20-99: (Last office visit) OD: Va 20/400, OS 20/25
- Damages: Alleged "nearly complete loss of vision OD"
  - Va pre 20/200 OD; post 20/400
  - Lost wages/medical expenses

OMIC

Failure to Diagnose Glaucoma -Case #3

Plaintiff Experts:
- Nothing in records suggest cataract surgery OD was planned for purpose of attaining clear exam
- Critical of: First postoperative exam 3 days after surgery
- Insured should not have performed surgery if able to monitor retina
- Most surgeons would have monitored Va /Ta evolution prior to cataract surgery

OMIC

Failure to Diagnose Glaucoma – Case #3

Allegation: Delayed treatment glaucoma
- Defense Expert: Post op care less than optimal; did not contribute to vision loss
  - CRVO ultimately decreased vision
- OMIC Review:
  - Case defensible: Indications for surgery sound; to allow further evaluation of occlusive disease
  - Glaucoma was appropriately diagnosed and treated; but postoperative pupillary block glaucoma occurred because of the inflammation not caused by the insured.

OMIC

Failure to Diagnose Glaucoma – Case #3

SUMMARY

- Liability statement: Jury believed insured negligent in early postoperative care
- Damage statement: Settlement value; less than $100,000
  - Jury verdict range: $200,000 - $300,000
  - % chance for defense verdict: > 60%.
- Status: initial hung jury, new trial
  - Ruled in favor of plaintiff
- Settled: $181,207.60.

Take home point: failure to explain expectations of sx with co-morbidities and …
When in doubt, refer out

OMIC

Failure to Diagnose Glaucoma – Case #2

Allegation:
Failure to diagnose and treat glaucoma

OMIC

Failure to Diagnose Glaucoma – Case #2

Medical facts:

- Patient seen regularly by insured since 1988
- 10-8-04: Patient now 68; Va 20/25 OD, 20/30 OS, IOP 20mmHg and 21mmHg
  - » Cup-to-disc changes; no testing
- 4-2005: VA 20/30 OU, IOP 20/22mmHg; no testing
- 3-20-06: Va 20/30 and 20/60; IOP 18/24mmHg; no testing
- 4-2006: Glaucoma (normal tension) diagnosis made while in Florida when being evaluation for chalazion: IOP 24mmHg OU; C/D 0.7/0.8
  - » Referred to glaucoma specialist: goal <12-13 mmHg
  - » Advanced MTMT (maximum tolerated medical therapy) + SLT

OMIC

Failure to Diagnose Glaucoma – Case #2

Damages:

- VA loss: superior arcuate OD; nasal step OS
- "Loss of enjoyment of life past, present and future, emotional distress, loss of consortium"
- Maintain functional vision: 20/20, 20/25 and driving

OMIC

Failure to Diagnose Glaucoma – Case #2

Plaintiff Expert:
Critical of insured for failure to closely monitor pressure, appropriate testing

OMIC Review
Unfortunate case with progressive nerve changes not acted upon – Dx/Tx missed for years, led to visual loss; left greater than right
…….Difficult to defend

OMIC 29

Failure to Diagnose Glaucoma – Case #2

SUMMARY

- Liability Statement: Insured below SOC
- Demand: $1.4 million "Hired Pinkerton surveillance" to investigate plaintiff "limitations"
- Status: Settled with split $250,000 OMIC, other insurance company $250,000

OMIC

Failure to Diagnose Glaucoma – Case #2

Take Home Point

Be a better clinician!!!

Simply had to act on change in optic nerve. If appropriate testing done may have made diagnosis earlier

OMIC 31

Failure to Diagnose Glaucoma – Case #1

Allegation:

Failure to diagnose and treat glaucoma

OMIC

Failure to Diagnose Glaucoma – Case #1

Medical facts

- 2000: Plaintiff then 53, treated for chalazion RUL
- 2003: LLL chalazion
- 9-2-03: Canaliculitis
- 10-03: Epiphora diagnosed- punctal plug placed
- 12-03: Plug removed

OMIC

Failure to Diagnose Glaucoma – Case #1

Medical Facts

- 2-04: Recurrent chalazion LLL, I&D + Celestone
- 4-04: Chronic tearing, conjunctivitis, steroid antibiotic treatment, possible nasal lacrimal duct obstruction
- 5-04: DCR performed. Dexamethasone RX
- 2-05: Insured noted patient taking steroid right eye PRN
- 6-05: Refill "OK'ed 6-7-05"
- 9-05: Rx: Tobradex prn
- 11-05: Plan repeat DCR OD; Tobradex OS, patient cancelled surgery

OMIC

Failure to Diagnose Glaucoma – Case #1

Medical Facts:

- 1-06: Complains of "shadowing" OD; IOP 36mm Hg OD, 21mmHg OS (first IOP taken in >1 year).
  - C/D ratio: 0.6/0.2
- 1-06: Patient obtained second opinion→ Glaucoma Specialist
  - Glaucoma Specialist DX: Steroid related Glaucoma, advanced to MTMT

OMIC

Failure to Diagnose Glaucoma – Case #1

Case #1:

- Medical Facts: "It goes from bad to worse"
- Glaucoma Specialist noted significant damage OD>OS advanced to MTMT-trabeculectomy OD/revision OD then developed hypotony maculopathy.
- Patient insurance did not list Glaucoma Specialist as provider.
- Insured spoke by telephone 2 times and wrote personal checks to patient (to cover Glc visits)
- "Recalls no discussion on limitation of steroid use"

OMIC

Failure to Diagnose Glaucoma – Case #1

Damages:
- 2-3 year delay in diagnosis
- Permanent Vision Loss in Right Eye
- "Loss of enjoyment of life past, present and future, emotional distress, loss of consortium"

OMIC

Failure to Diagnose Glaucoma – Case #1

Defense expert:
– Failure to monitor IOP; diagnose glaucoma

OMIC review:
– Insured admitted treated chronic right eye with antibiotic/steroid without fundus exam/pressure check
– Insured was below standard of care
– Difficult to defend

OMIC 38

Failure to Diagnose Glaucoma – Case #1

Case #1:
– Liability Statement:
  - Insured below SOC
  - Demand: $1,000,000

Status: Settlement at $400,000

OMIC

Failure to Diagnose Glaucoma – Case #1

Lesson learned:

Confucius?: Recall to look at forest even though looking at single tree

OR

Never attempt to "buy off" a patient

OMIC

Failure to Diagnose Glaucoma – Summary

Case #4 – failure to DX Chandler's -> be a better clinician

Case #3 – failure to DX NTG -> do appropriate testing

Case #2 – Cat SX/ CRVO → failure to relay expectations

Case #1 – Steroid Glaucoma → too many errors to list!

OMIC 41

Failure to Diagnose RD: Case #3

Allegation:

Failure to diagnose RD OD led to HM vision

OMIC 43

Plaintiff

- 32yo myope (-6.5D OU)
- Former Executive Assistant
  - Salary $86,000 + benefits
  - On disability since 11/3/11
- "Jury would likely be sympathetic to her situation"

Insured

- Well-respected retina specialist
- Pt also saw partners
- Retired shortly after seeing patient
- "Comfortable, polite, articulate"

OMIC 44

Facts of Case: 9/12/11

- Pt noted floaters, "darker vision" in lower vision OD
- 20/20 OU, no cells in anterior vitreous; no PVD
- Fundus normal on indirect ophthalmoscopy
  - Scleral depression not performed
    - Dr. A states very good view of retina; examined twice
  - No mention of lattice degeneration
    - Previously noted by O.D., but not by Dr. A's partner (Dr. B) in 2010
- Dx: Vitreous syneresis

OMIC 45

Facts of Case: 10/27/11

- Recent worsening grey shadow lower right corner
- Partner Dr. C dx'd superior RD OD, 20/32, splitting fovea
  - Also documented lattice degeneration
- Pneumatic retinopexy performed
- 12/13/11: attached, 20/30 OD

OMIC 46

Facts of Case: December 2011

- In Hawaii, "cloudy vision"
  - 12/16/11: Dr. D – CF 4', "flat 360", prior RD noted, laser demarcation performed
  - 12/21/11: CF, "stable"
- 12/25/11: Vision noticeably worse
- 12/27/11: Dr. E in Maui – mac-off RD, CF vision, option to repair or return home

OMIC 47

Facts of Case

- 12/29/11: Pt saw Dr. F – CF, RD
  - Buckle / vitrectomy #1
- Initially did well – vision 20/250 on 1/23/12
- 1/30/12: PVR - Vitrectomy #2 / MP / EL / gas
- 3/26/12: Vitrectomy #3, lensectomy, SO
- 5/30/12: Vitrectomy #4, 360deg retinotomy, subretinal membrane removal, SO exchange
- OD stable at HM vision
- July 2012: retinal tears **OS** lasered x 4 – additional tears lasered May 2013

OMIC 48

Plaintiff Expert

- Critical of lack of scleral depressed exam
- Critical of failure to note lattice degeneration

Defense Expert

- Majority of problems unrelated to initial RD
- Insured within SOC but lack of scleral depression a weakness

OMIC 49

AAO PPP for PVD, Ret Breaks, LD

The eye examination should include the following elements:

- Examination of the vitreous for hemorrhage, detachment, and pigmented cells (4-9,59 [A:II])
- Peripheral fundus examination with scleral depression (60 [A:III])

OMIC 50

Summary

- Allegation: Failure to diagnose retinal detachment
- Outcome: Vision 20/20 to HM
- Lack of Scleral Depression likely below SOC
- Liability
  - 50-60% chance of defense verdict
- Damages
  - Verdict range could be $1.2 – 2.1M

- Status: Case settled for $300,000

OMIC 51

Take-home points

- Perform thorough exam
- Document thoroughly

OMIC 52

Take-home points

- Perform thorough exam
- Document thoroughly
- Avoid becoming depressed – scleral depress!

OMIC 53

Take-home points

- Perform thorough exam
- Document thoroughly
- Avoid becoming depressed – scleral depress!

OMIC 54

Case 2: Failure to Diagnose RD

- Plaintiff: 47yo surgeon
- Insured: Prominent academic retinal surgeon

Facts of Case

- Nov 2008: Plaintiff "poked in eye by son"
- Sees local retina (Dr. A)
- CF 1ft, Pre-macular hemorrhage
- On Coumadin for prior CVA

Immediate Referral to University

- Seen by insured retina Dr. B.
- VA CF; small ST retinal tear, significant heme, probable choroidal rupture
- B-scans show no RD
- Tear lasered
- Options Discussed: Vitrectomy vs. observe
- Pt elects observation

Nov – Dec 2008 – January 2009

- Multiple visits & B-scans
  - Persistent VH, PVD
  - Pt continues to elect observation
- Jan 2009: Pt agrees to vitrectomy
  - Consented for vitrectomy with laser
  - Vitrectomy / MP / EL 360
  - Pt states "never consented to 360 laser"

Feb 2009

- Feb 3: Vision improved to 20/70
- Feb 11: New symptoms; no RD noted
  - No B-scan as view clear
- Hours later, returns to local retina Dr. A. – shallow RD
- Referred to insured Dr. B– new RD on B-scan
- Same evening: Repeat vitrectomy, endolaser, GFX

March 2009

- VA CF, attached
- Pt develops cataract and metamorphopsia due to PVR
- Transfers care to another university
- Cataract surgery not recommended due to poor visual potential

Allegations

- Both vitrectomies "untimely and procedurally flawed"
- Claims lost wages of $4.4 – 5.9 million

Plaintiff's Experts

- Initial endolaser was excessive and not standard of care
- Insured missed RD in February

Defense Expert

- RD could have developed over few hours between exams, but difficult to defend without additional documentation (i.e. B-scan or depressed exam)

OMIC 61

Outcome

- Settled for $500,000

Take-home points

- Perform thorough exam
- Document thoroughly
- Be particularly careful in cases of trauma

OMIC 62

Case 1: Failure to Diagnose RD

- Plaintiff: 65yo surgeon
- Insured: General ophthalmologist

OMIC 63

Facts of Case

- Late Oct 2005: Plaintiff had mild trauma to R orbit (bumped on cabinet door)
- Nov 2: New floaters
- Nov 3: Blurred vision

OMIC 64

Nov 4 2005

- Friday - Pt sees insured ophthalmologist for blurred vision
- Cursory history
- VA 20/40 OU correctable to 20/25
- No dilation
- Bifocals prescribed

OMIC 65

Nov 6 2005

- Saturday - Pt calls insured at midnight with loss of vision OD
- Insured arranges for retina evaluation
- Sunday morning – retinal surgeon diagnoses RD, performs pneumatic retinopexy

OMIC 66

Dec 2009

- VA 20/400
- Persistent IT SRF
- Barricade laser performed
- No further improvement

OMIC 67

Allegations

- Failure to diagnose and treat RD
- Claims lost wages of $3.7 million

Defense Expert

- Lack of dilation on initial exam likely below standard of care

Outcome

- Settled for $650,000

OMIC 68

Case 1: Take-home points

- Take a thorough history
- Perform thorough exam, including dilation
- Document thoroughly
- Be particularly careful in cases of trauma

OMIC 69

Take-home points: Summary

Case #3: For F/F, Scleral Depress!

Case #2: Be particularly careful in cases of Trauma

- Document thoroughly (including B-scan if any doubt)

Case #1: Take a thorough history including Trauma

- Perform thorough exam, including dilation
- When in doubt, refer out!

OMIC 70

OMIC

Anne M Menke, RN, PhD

OMIC Risk Manager

OPHTHALMIC MUTUAL INSURANCE COMPANY (A Risk Retention Group)

Cause of errors

- Where in the diagnostic process did errors occur?
- What factors contributed to the error?

- Gandhi TK et al. Missed and delayed diagnoses in the ambulatory setting: A study of closed malpractice claims. *Ann Intern Med* 2006; 145: 488-496.
- Malpractice risks in the diagnostic process. 2014 CRICO Benchmarking Report.ww.rmfstrategies.com

OMIC 72

Diagnostic Process

- **Initial** diagnostic assessment
  - Problem noted, care sought
  - History and physical conducted
  - Patient assessed, symptoms evaluated
  - Differential diagnosis established
  - Diagnostic tests ordered

OMIC 73

Diagnostic Process

- Testing and results processing
  - Tests performed
  - Tests interpreted
  - Test results transmitted to/received by ordering physician

OMIC 74

Diagnostic Process

- Follow up and coordination of care
  - Physician follows up with patient
  - Referrals/consults
  - Patient information communicated among care team members
  - Patient and providers establish follow-up plan
  - Monitoring of patient

OMIC 75

Diagnostic Process Analysis: Top 5 Glaucoma & Retina Claims

	Initial Diagnostic Assessment	Testing and Results Processing	Follow up and Coordination of Care
Glaucoma	•Assess 1		•Follow-up •Interval 1 •Timing 1 •Monitoring 3 •Noncompliance 1
Retina	•H&P 3 •Assess 2 •Differential 2		•Monitoring 1
TOTAL	8		7

OMIC 76

Factors Impacting Diagnostic Process

- Cognitive
  - Knowledge
  - Judgment
  - Vigilance/memory
- System
  - Communication & coordination of care
  - Appointment, test, referral tracking
- Patient
  - Clinical and non-clinical factors

OMIC 77

Factors Analysis: Top Five Glaucoma & Retina Claims

	Cognitive	System	Patient
Glaucoma	•Judgment 4	•Appointment scheduling 1	•Noncompliance 1
Retina	•Judgment 4	•EHR carry forward function 1	•Clinical condition 1
TOTAL	8	2	2

OMIC 78

Clinical reasoning process

- **System 1**: intuitive, automatic processing
  - Benefit of experience
  - Works well for common conditions that present in typical, easily recognized fashion
  - TRAP: cognitive shortcuts and biases
- **System 2**: deliberative, rational consideration
  - Needed for more complex presentations

OMIC 79

Get a 2nd opinion from yourself

- Take a diagnostic time out
  - Seek alternative explanations: **"Could this be something else?"**
  - Explore the consequences of alternative diagnoses: **"If I am wrong, what don't I want this to be?"**
  - Be open to unexplained findings and test results that challenge your diagnosis
  - Accept uncertainty

OMIC 80

Audience response question #1

- What percentage of malpractice claims in the OMIC study were due to diagnostic error?
  1. 5%
  2. **12%**
  3. 20%
  4. 24%

1. 12%

OMIC 81

Audience response question #2

- What condition led to the most failure to diagnose malpractice claims?
  1. Glaucoma
  2. Giant cell arteritis
  3. Retinal detachment
  4. Corneal infection

OMIC 82

Audience response question #2

- What condition led to the most failure to diagnose malpractice claims?
  1. Glaucoma
  2. Giant cell arteritis
  3. **Retinal detachment**
  4. Corneal infection

OMIC 83

Audience response question #3

- What factor contributed the most to diagnostic errors?
  1. Atypical presentations
  2. Physicians' cognitive processes
  3. Failure to follow up on test results
  4. Poor communication among healthcare providers

OMIC 84

Audience response question #3

- What factor contributed the most to diagnostic errors?
  1. Atypical presentations
  2. **Physicians' cognitive processes**
  3. Failure to follow up on test results
  4. Poor communication among healthcare providers

OMIC 85

Questions?

riskmanagement@omic.com

Anne M. Menke, RN, PhD
415-202-4651
amenke@omic.com

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