

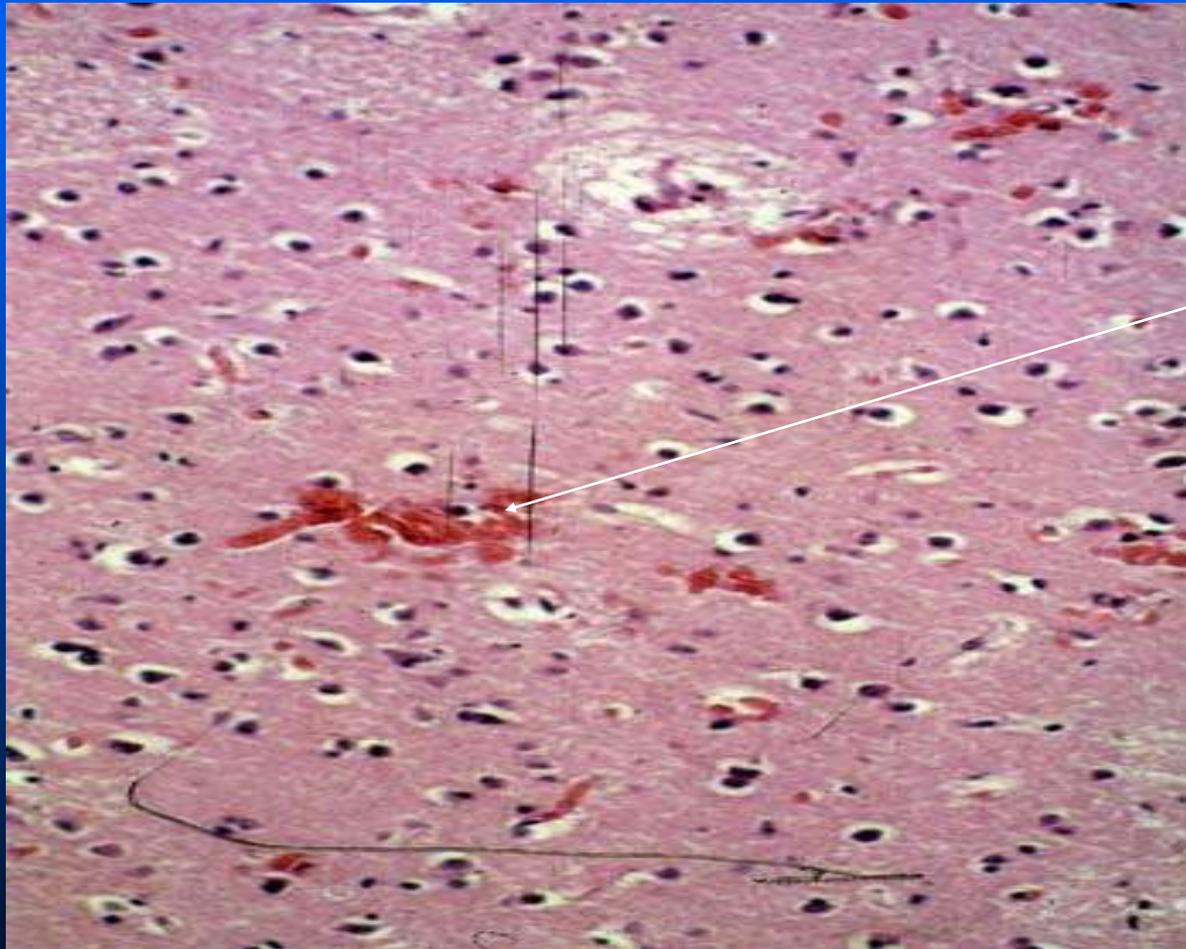
# Contusion Tears

- **Contusion tears** of brain - seen in abusive head injuries - under 5 months old
- Separation between cortex and subcortical white or within cortex
- Gross finding at autopsy
- Always associated with SDH, SAH - a lesion of DAI
- Should not be diagnosed alone by micro

# Contusion Tears 2

- Called by prosecution to serve as expert in abusive head injury case.
- On review of case, there is no head injury
- Pathologist who made this diagnosis based it upon finding on random microscopic sections of brain, small tissues tears and perivascular hemorrhages

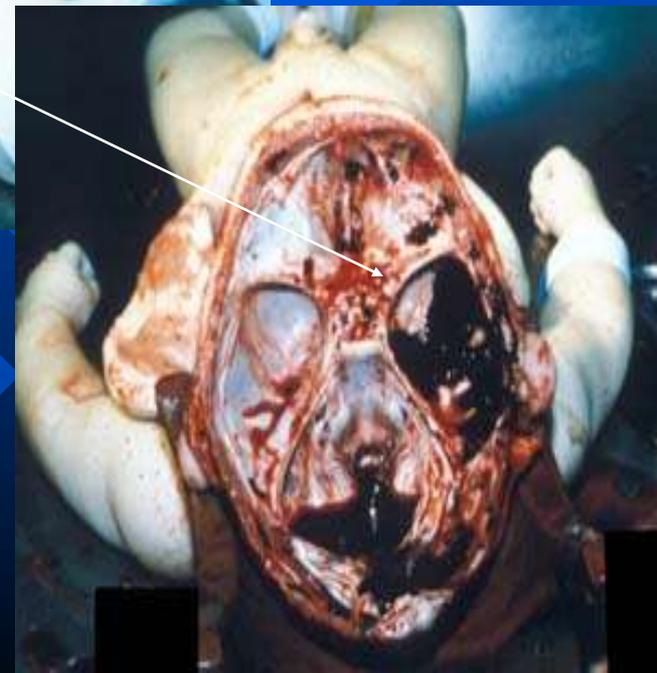
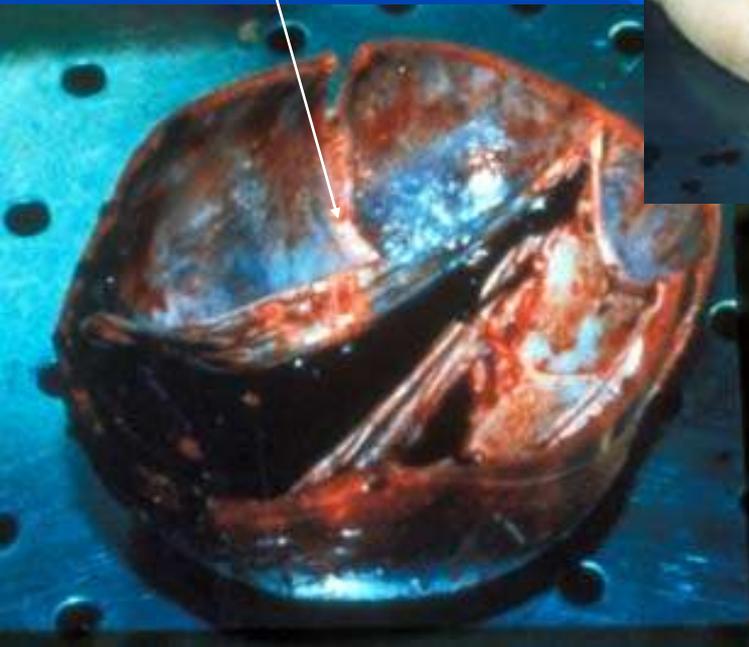
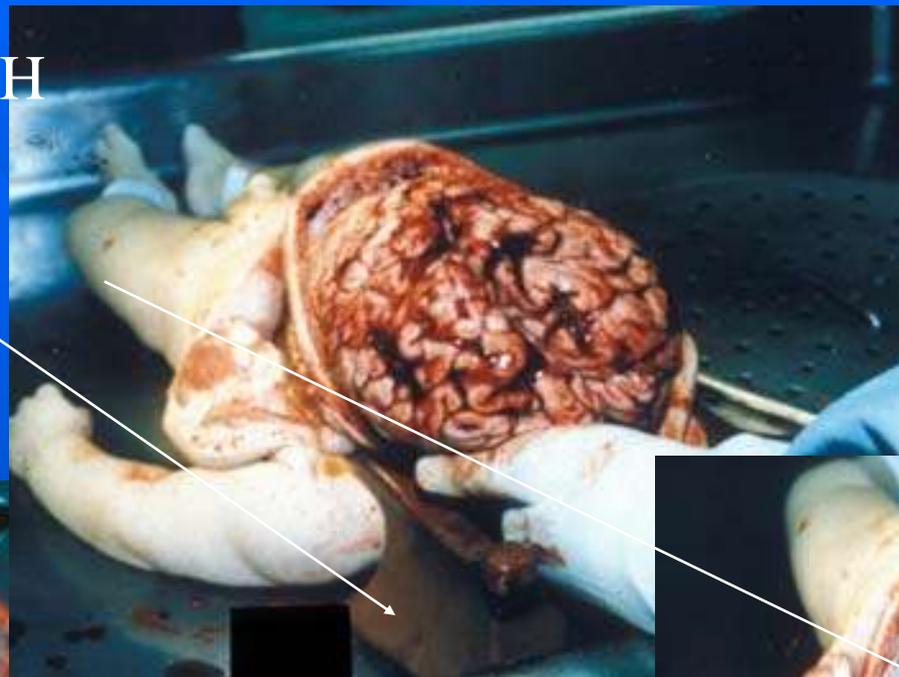
# Contusion Tears 3



normal brain with  
tissue tears

# Contusion Tears 4

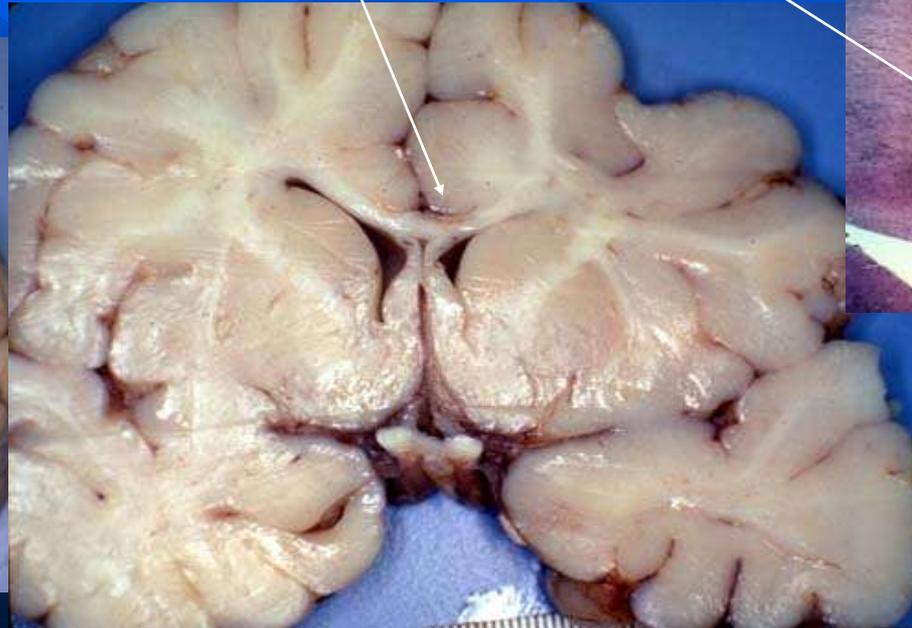
7 month old with ASDH



# Contusion Tears 5

contusion tear in corpus callosum

SAH



# Spinal Epidural Hemorrhage

- Towbin -1967 - reported epidural hemorrhages in cervical spines of 5 children who died suddenly and unexpectedly
  - » Thought these hemorrhages might be traumatic
  - » Related to cause of death by producing mechanical injury to cord

# Spinal Epidural Hemorrhage

## 2

- Harris and Adelson - 1969 - reported on 19 infants < 1 year who died suddenly and unexpectedly
  - 5 died from natural causes
  - 14 were unexplained - SIDS
  - 18 demonstrated epidural hemorrhages - from congestion to extensive hemorrhage - greatest at lower cervical

# Spinal Epidural Hemorrhage 3

## ■ Harris and Adelson - 1969- 3

conclusions:

- epidural hemorrhages were not traumatic
- presence of blood was not damaging to the spine
- probably hemodynamic forces were responsible

# Spinal Epidural Hemorrhage 4

- Hadley - 1989 - 13 shaken infants - 1.5 to 14 months - 8 died and 6 were autopsied
  - 5/6 had epidural hemorrhage in cervical spine
  - 4/6 had subdural hemorrhage in cervical spine
  - 4/6 had contusions of high cervical cord
  - 1/6 had none

# Spinal Epidural Hemorrhage 5

- Hadley's report of interest
  - SDH - expected when SDH intracranial
  - Harris & Adelson had looked at the epidural question but prior to time of SBS diagnoses
  - first report of contusions with SBS

# Spinal Epidural Hemorrhage 6

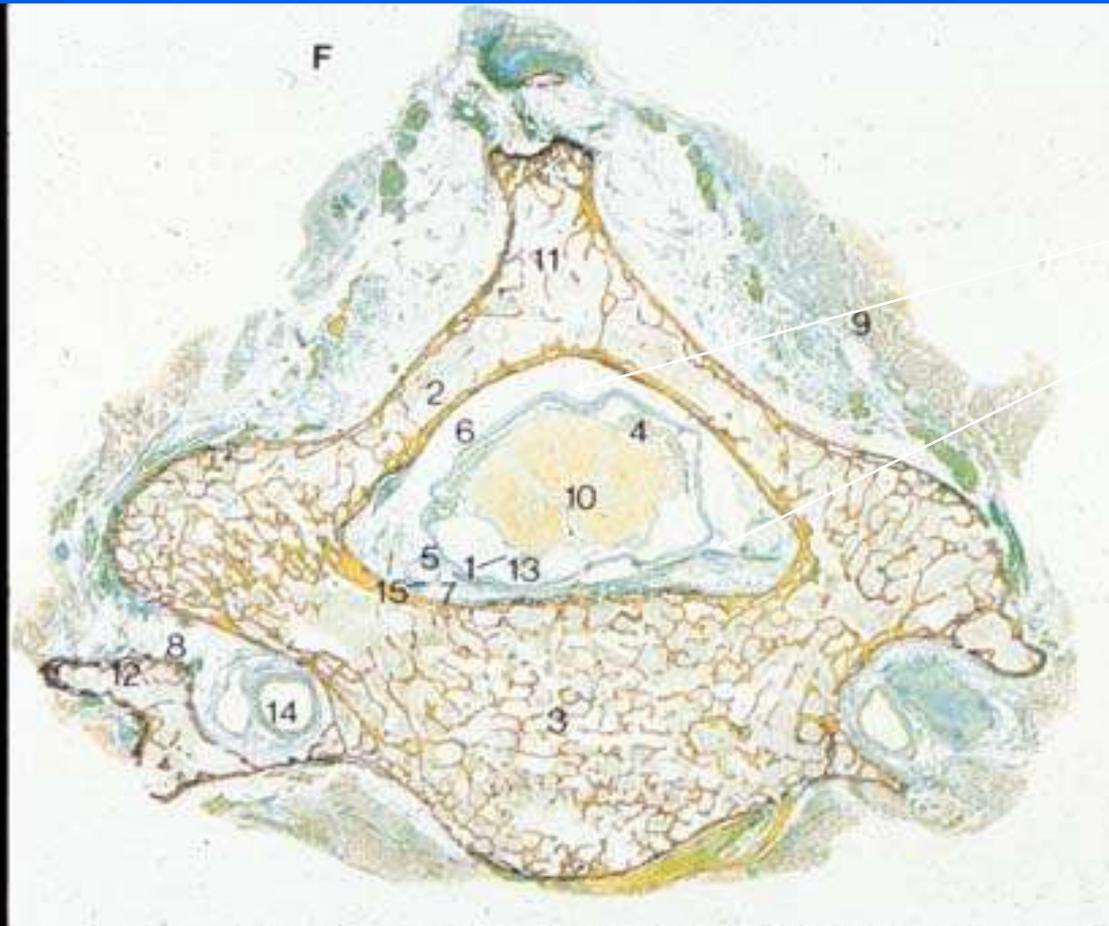
- Case study - 1989 - posterior neck dissections in all SBS
- 1992 - study expanded to all children < 3 years
- After looking at > 50 cases and controls, conclusion was both groups frequently have spinal epidural hemorrhage

# Epidural Hemorrhage 7

## ■ Case study

- Recommendation - all children < 3 years old - when there is any head injury or suspicious finding
- remove spinal cord and brain together from posterior

# Epidural Hemorrhage 8



epidural space  
lots of fat and vessels

# Epidural Hemorrhage 9

- non-traumatic spinal
- epidural spaces



# Focal Epidural Hemorrhage

- 4 mo old male – born at 7 ½ mo gestation by C section – birth wt 4 lb – 3/24/03 – sleeping in parent’s bed and fell off bed striking right side of head on bed-side table – seemed OK – on 3/25 – taken to children’s hospital and had CT which was normal – at home later was fussy and did not eat or sleep well – on 3/27 mother was taking child to pediatrician – found unresponsive in car seat on arrival at office

# Focal Epidural Hemorrhage 2

- Immediately taken to ER and full resuscitation efforts were unsuccessful

# Focal Epidural Hemorrhage 3

## ■ Autopsy

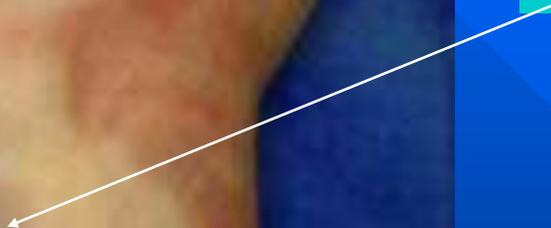
- Infantile form of polycystic kidneys
- Fibrosis of liver
- Fresh fractures, anterior cortex only, L ribs 3 – 7 and R ribs 2 – 6
- Craniocerebral trauma
  - » Subgaleal hemorrhage, R frontal
  - » Fracture, R frontal and R orbital plate
  - » Epidural hemorrhage, thin layer, R orbital plate

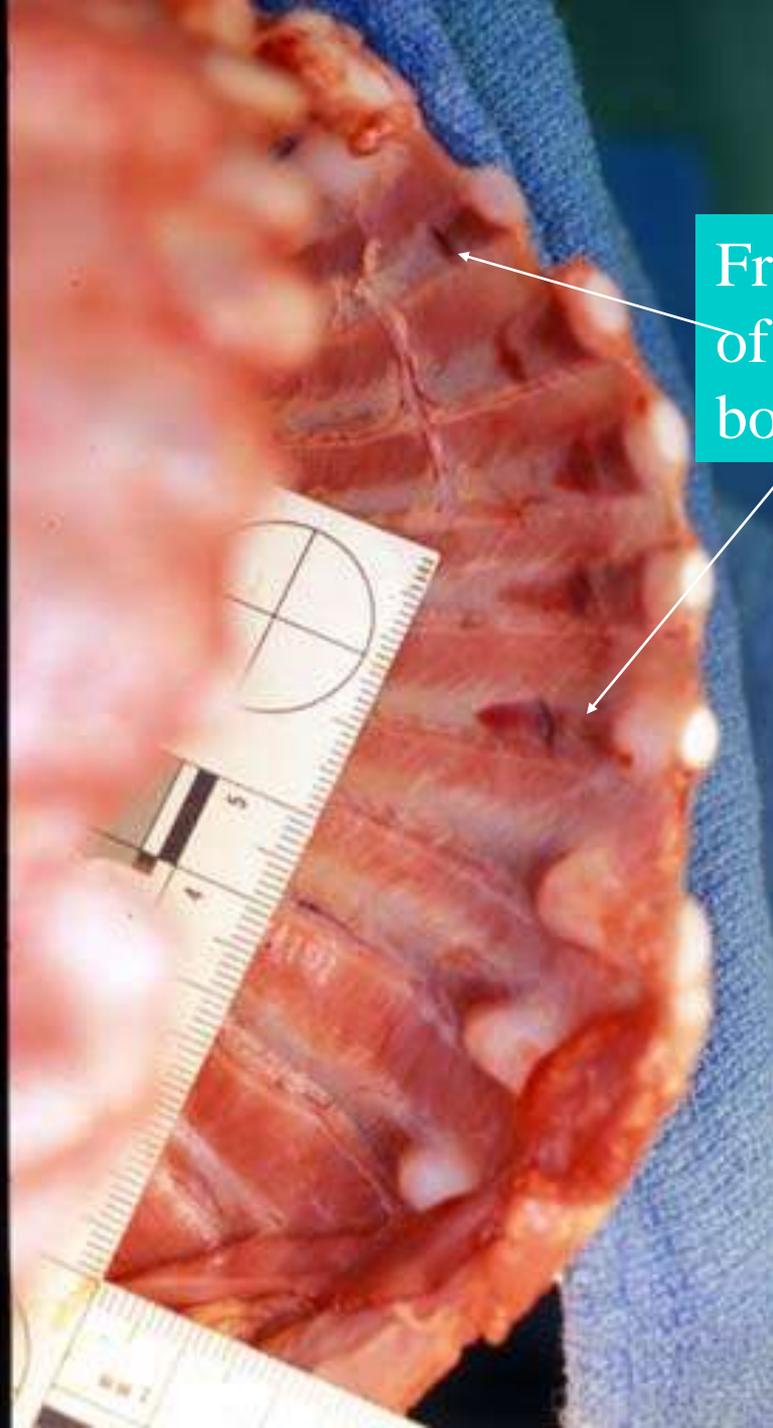


Ecchymosis, R orbital

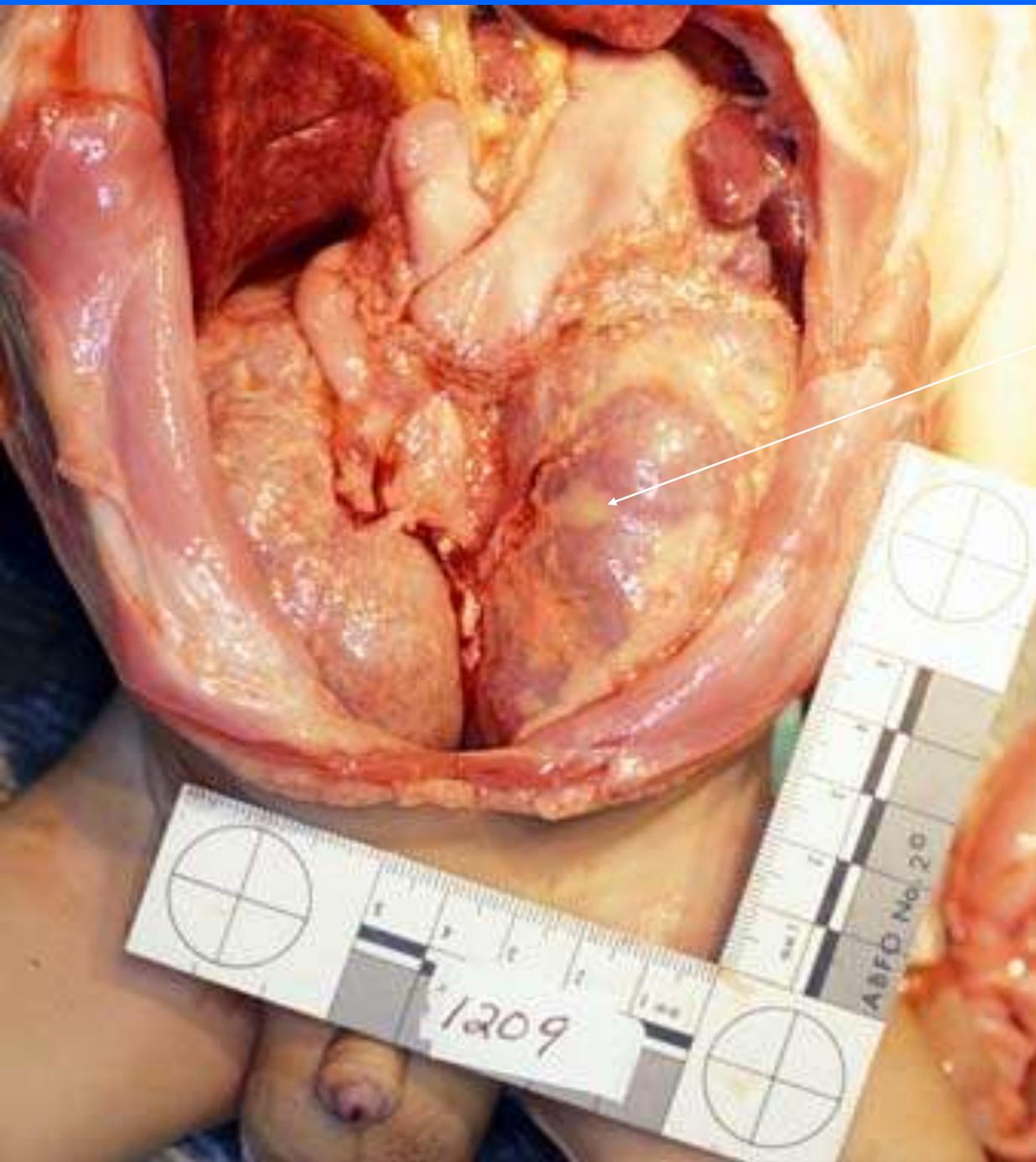


Mongolian spot





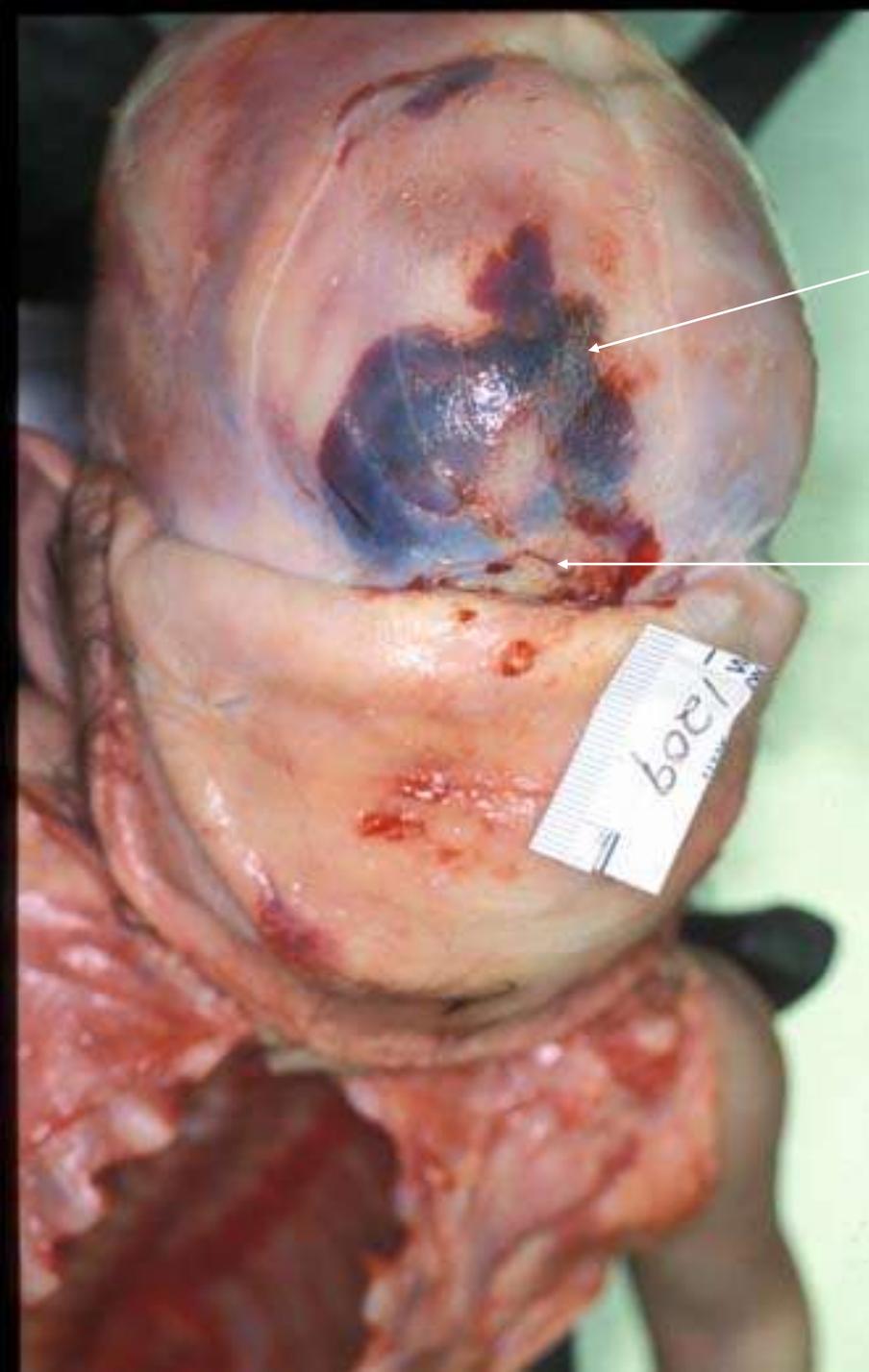
Fractures of anterior cortex  
of ribs – very fresh –  
bones are very deficient



Polycystic kidneys



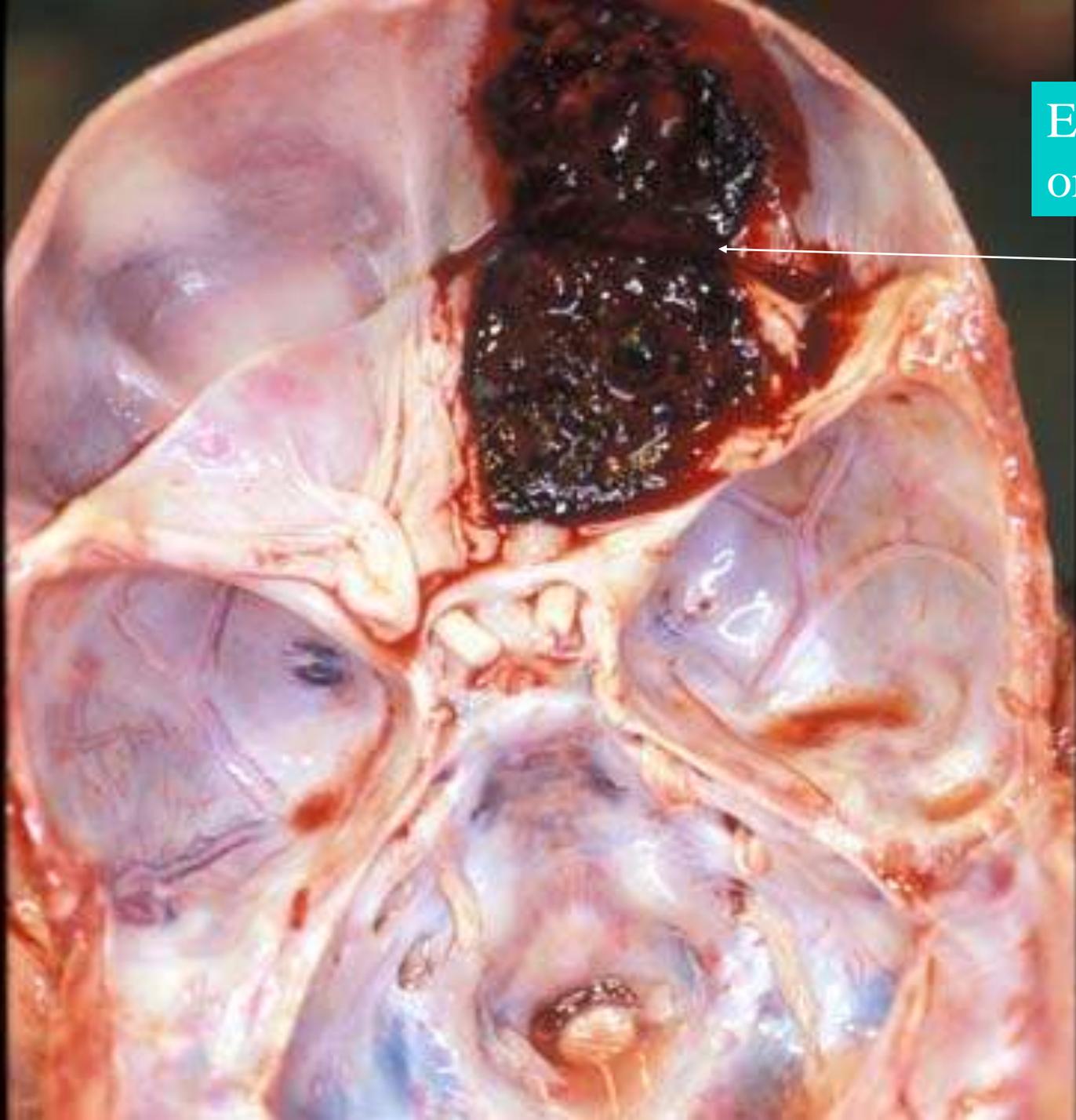
Polycystic kidneys – no normal renal tissue by microscopy

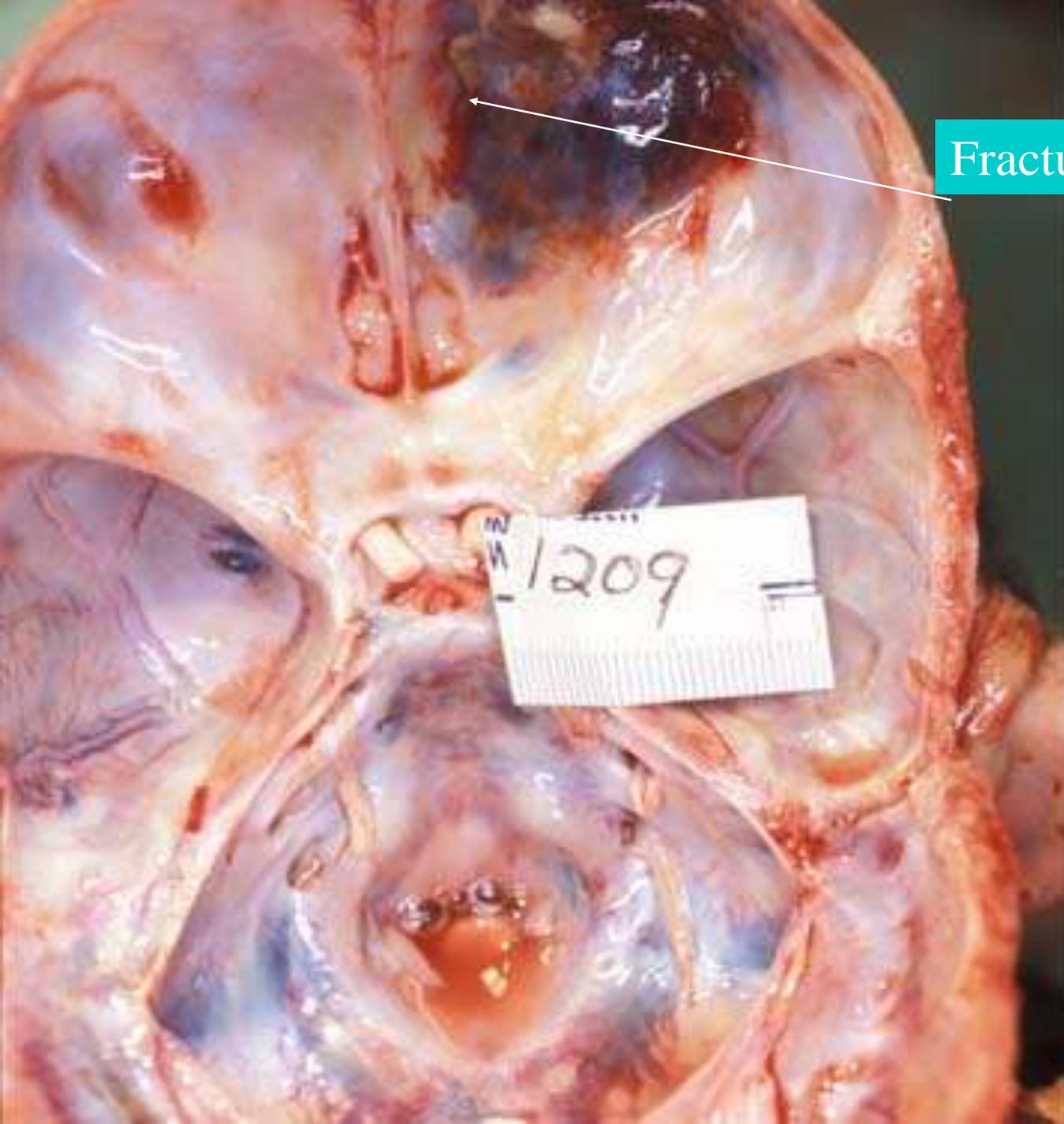


Periosteal hemorrhage, R frontal

Fracture, R frontal

Epidural blood R  
orbital plate





Fracture, R orbital plate

# Focal Epidural Hemorrhage 4

- Eyes – negative for hemorrhage
- Brain – focal SAH, R superior frontal gyrus
- Dura – epidural blood, R frontal, early organization
- Heart – collections of lymphocytes and focal destruction of myocardial fibers
- Lungs – interstitial collections of lymphocytes
- COD –craniocerebral trauma
- MOD - accident

# Short Fall with EDH

- 2 yr old male – lived with aunt who was in process of adopting him – born at 7 mo addicted to crack
- Has asthma
- Aunt's boyfriend came home from work – was taking shower at 12 am and heard loud thud and crying – checked and found child on floor crying

# Short Fall with EDH

- Appears that he had fallen out of his bed – 21 ½ in from floor – hardwood floor
- Woke up the aunt and she comforted child and laid down in bed with him
- At 1:20 am – he vomited – the aunt cleaned him up and put him back into his bed
- At 6 am the aunt checks on him and sees he has vomited again

# Short Fall with EDH

- The aunt checks closer and he is unresponsive
- 911 called and run full code
- Pronounced DOA at hospital
- Past history of poor balance because of the crack addiction as infant

# Short Fall with EDH

## ■ Autopsy

- Subgaleal hemorrhage – L temporal
- Fracture – L temporal bone 17 mm long
- Epidural hemorrhage – large amount - 100 ml – L temporal convexity
- L tentorial herniation
- Eyes – negative for hemorrhage
- COD – craniocerebral trauma
- MOD - accident



99-3656





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# 4th of July in St. Louis

