Jaroslava Dušková

Inst. Pathol. , 1st Med. Faculty, Charles Univ. Prague
Neuroimmunoendocrine Regulations

CRF, ACT

IL-1 neuronal synapses

n.vagus

Adrenals

+ corticotherapy!

Glucocorticoids

Immune cells

TNF, IL-6, IL-1
The reflex arc of axon reflex has neither an integration center nor any synapse.

Pathology of AIDS

Direct HIV effect
Opportune infections
Neoplastic processes
HIV-Related Lymphadenopathy – HIVRL

- persistent generalized HIVRL
  - >3mth duration
  - absence of other agent causing lymphadenopathy
  - histological evidence of follicular hyperplasia

BIOPSY
dif. dg.:
- HIV-Related Lymphadenopathy – HIVRL
- infection
- lymphoma
- Kaposi sarcoma
ARC

enlarged germinal centre
ARC

hypercellular parafollicular zone
sclerosed & collapsed lymphoid follicle

AIDS
Angiofollicular hyperplasia

AIDS
Neuropathology of AIDS

Direct HIV effect
- HIV encephalitis
- leucoencephalopathy
- vacuolar myelopathy
- neuropathy
- myopathy

vasculitides, AIDS-Dementia complex, HIV-associated progressive encephalopathy of childhood
Portals of Entry to CNS

**hematogenous** (pyemia, sepsis, viremia)

directly

via plexus chorioideus

**local source**

directly (trauma)

bone melting (sinusitis, otitis)

vv. emissariae

along nerves (filla olfactoria)
HIV encephalitis
HIV encephalitis
Pathology of AIDS

Opportune infections

parasites: toxoplasmosis

mycoses, mycobacteria, spirochetes:

- Aspergillus, Candida, Cryptococcus
- Mycobacterium avium intracellulare
- Mycobacterium tuberculosis
- Treponema pallidum

viral

- Cytomegalovirus
- Herpes simplex
- Herpes zoster
- Polyoma PML
Toxoplasmosis – lymphadenitis cervicalis profunda
Candidosis
Candidosis oesophagi
Intertrigo
Toxoplasmosis cerebri
Toxoplasmosis

stereotactic brain biopsy
Cryptococcosis

methenamine silver (sputum)

polychrome (CSF)
Cryptococcosis

PAS
Candidosis vaginae
Candidosis - sputum
Candidosis – BAL polychrome // methenamine silver)
Aspergillosis pulmonum
TBC pulmonum cavernosa
Aspergillosis

sputum

fruiting head

polychrome
Aspergillosis

BAL (methenamine silver)
cardiac fungal infection (CFI) incidence is increasing

- a grim prognosis
- an early diagnosis and aggressive therapy
- among a total of 4396 autopsy cases 50 CFI patients (1.1%)
- 32 males and 18 females - mean age of 65.5 years
- underlying diseases for CFI included solid malignant neoplasms (n=23), hematologic disorders (n=10), chronic renal diseases (n=7), liver diseases (n=5), diabetes mellitus (n=5), and other

- none of the patients was diagnosed to have CFI antemortem!
- most patients (n=45) demonstrated multi-organ fungal infections with myocardial involvement
- causative pathogens were Candida (n=36), Aspergillus (n=9), Mucor (n=4), and Cryptococcus (n=1).
Cytomegalovirosis
Herpes anogenitalis
Herpes
Herpes labialis
Gingivostomatitis herpetica,
obj. 4x
Gingivostomatitis herpetica,
obj. 20x
Mycobacterium avium intracellulare
Hepatic involvement is common in miliary and extra-pulmonary tuberculosis but is usually clinically silent.

A patient that presented with prolonged fever and hepatomegaly.

Liver biopsy revealed non-necrotizing granulomas that led in turn to the diagnosis of generalized tuberculosis and HIV infection.

Diagnosis of hepatic tuberculosis requires a high degree of suspicion especially in AIDS patients who show atypical presentations.

Good results have been obtained with the four drug regimen.
Pneumocystis jiroveci pneumonia
Pneumocystis jiroveci

„Snowball“ with icicle effect
Trichomoniasis
Steven I. Hajdu, MD, FIAC

Memorial Sloan-Kettering Cancer Center, USA

(dressed in three layers of protective garbs to do an AIDS autopsy)
Most Common Malignant Neoplasms in AIDS Patients

- Kaposi sarcoma (HHV 8)
- Malignant lymphoma (HHV 8, EBV) (undiff. large B cell extranodal)
- Squamous cell carcinoma (HPV)
Kaposi’s sarcoma

KSHV, HHV-8

*Sarcoma idiopathicum multiplex haemorrhAGICUM Kaposi*

Four forms

- **Classic** *(not HIV ass)*, Ashkenazy Jews, old, localized
- **Endemic African KS**, young and children, LN and viscera spread, aggressive
- **Transplantation ass.** LN and viscera spread, aggressive
- **HIV infected** LN and viscera spread, aggressive
Sarcoma Kaposi

HHV-8
Sarcoma Kaposii
Kaposi sarcoma
Kaposi sarcoma
dr. Moritz Kaposi

- dr. Moritz Kohn born in Kaposvar Hungary 1837
- associate of Prof. Hebra 1865
- dating Martha Hebra 1867
- changing his name to Kaposi 1871
- changing his religion 1872
- described sarcoma idiopathicum multiplex haemorrhagicum 1872
- married Martha Hebra 1872
- died Vienna 1902
Schulz TF.:  
The pleiotropic effects of Kaposi's sarcoma herpesvirus.  


- Kaposi's sarcoma herpesvirus HHV8
- an essential factor in the pathogenesis of
  - Kaposi's sarcoma (KS)
  - multicentric Castleman's disease (MCD)
  - primary effusion lymphoma (PEL)

- an occasional involvement in
  - bone marrow hypoplasia
  - haemophagocytic syndrome

Other disease associations are unconfirmed or controversial.

HHV8-associated disease is of particular importance in immunosuppressed individuals, in particular in patients with HIV infection and transplant recipients.
nH ML  (colon and mesenterium involved)
Neuropathology of AIDS -

tumours

Primary cerebral lymphoma

mostly B type

often multicentric

EB virus proven in some

Kaposi sarcoma  *(HHV8 related)*

exceptionally meta to CNS
Primary cerebral B cell lymphoma
Well Differentiated Squamous Cell Carcinoma In an AIDS Patient
Since the 1996 advent of highly active antiretroviral therapy (HAART) the incidence of most opportunistic disorders in the developed world has declined but not disappeared.

The number of new yearly HIV infections (about 55,000) and the total number of US infections (more than 1.1 million) remain very significant.

Opportunistic GI disorders were diagnosed in 442 endoscopies performed since 1996 as before, but at about one half the rate.

- The esophagus - *Candida*.
- *Helicobacter pylori* - the most common gastric infection
- The small bowel still showed cytomegalovirus (CMV), cryptosporidia, and *Mycobacterium avium complex* (MAC) infections.
- Large bowel infections were CMV, cryptosporidiosis, MAC, and spirochetosis
- Cases of adenovirus, bacterial colitis, *Kaposi sarcoma*, and lymphoma were still diagnosed.
F68, CLL

biopsy in an immunocompromised patient

- Two rapidly growing tumours on the right upper and lower extremity.

- Excisions: 33x18x22 mm and 23x14x14 mm
Bone marrow  July 2014  Chronic Lymphatic Leukemia
Endothelial proliferation with atypiae
Endothelial markers positive

CD 31

ERG 1
Immunohistochemistry

Ki-67 (MIB1) 10%

KSHV (HH8) -
Warthin Stary impregnation 40x
Biopsy report

- Florid vascular proliferations with impregnation positive rods
- Most probably bacillary angiomatosis
- Reactive proces caused by bacteria Bartonella sp.

- PSEUDOTUMOUR !!!
Thank You