

# Telepathology: a reality of a french and congolese experience

- Ilunga Nikulu J<sup>1</sup>, Kyabu Kabila V<sup>1</sup>, Mwenze Mwadi<sup>1</sup>, Huber M<sup>2</sup>, Hurwitz<sup>2,3</sup> N, Raphaël M<sup>4,5</sup>
- 1) University of Lubumbashi (Congo DR)
- 2) University of Basel
- 3) INCTR
- 4) Faculté de Médecine, Université Paris Sud, Le Kremlin Bicetre

# CONGO DR AND LUBUMBASHI

## CONGO IN AFRICA



## LUBUMBASHI IN CONGO



# CONGO DR AND LUBUMBASHI

## CONGO DR

- Size; more then 2,3 millions of km<sup>2</sup>
  - Greater then
    - BENELUX (33 time)
    - France ( 4 times)
    - Quebec ( 2 times)
- Population
  - 60,8 millions (2005)

## LUBUMBASHI

- 2000 Km from Kinshasa
- Main City in Katanga
- Population
  - More then 2 millions

# PATHOLOGY IN CONGO

- Neglected field of Medicine
  - Few number of Pathologists for the all Country
  - Equipment out of date
- Consequences:
  - Loneliness of Pathologists
  - Diagnosis not well improved
- Telepathology Network
  - Opportunity to fight against these problems

# MAIN PURPOSES

- 1) To improve routine technique and to begin immuno-histology
- 2) To give Diagnostic help and training for future Pathologists
- 3) To use TP in Teaching for Medical students

# MATERIAL

- Binocular Microscope with digital camera
  - A gift from Dr Koichi Honma, Dokyo University, Japan
- Portable Computer
- i-Path Program allowing internet connexion between Experimented Pathologists
- Period of experience: November 2009- April 2011

# METHOD

- Selected images at 640x480 pixels
- Clinical and biological data of Patients
- Comments and diagnosis proposals collected
- Final diagnosis

# Experience in Haematopathology

- Pathologist from Lubumbashi
- Experts haematopathologists (European Association for Haematopathology or EAHP)

# NUMBER OF ANALYSIS

- From November 2009 to April 2011
- Tele discussion included 28 patients
  - 23 for haematopathology
    - Blood
    - Bone marrow
    - Lymph Nodes
  - 5 other origins

# DOWNLOADING IMAGES IS TIME CONSUMMING

- Limits: 45 sec to 10 minutes
  - Up to the number of images

# IMAGE QUALITY

- Total Number: 28
- Bad and insufficient: 4
- Good and diagnostic: 20
- Intermediary: 4

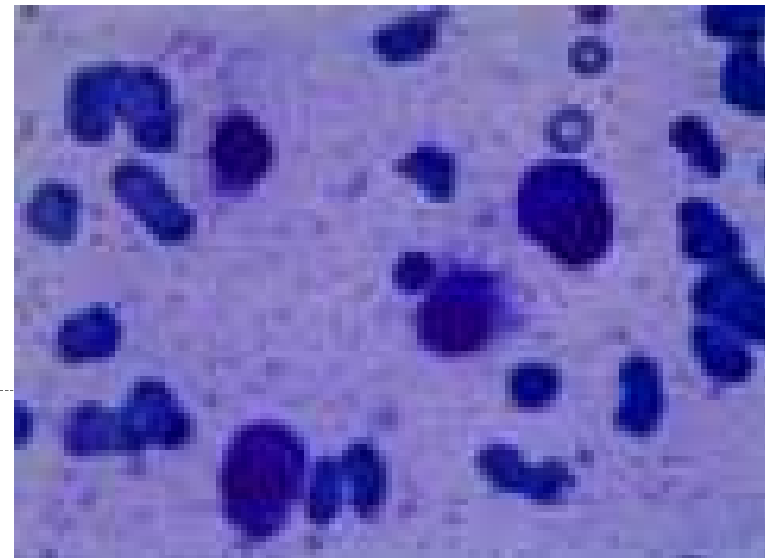
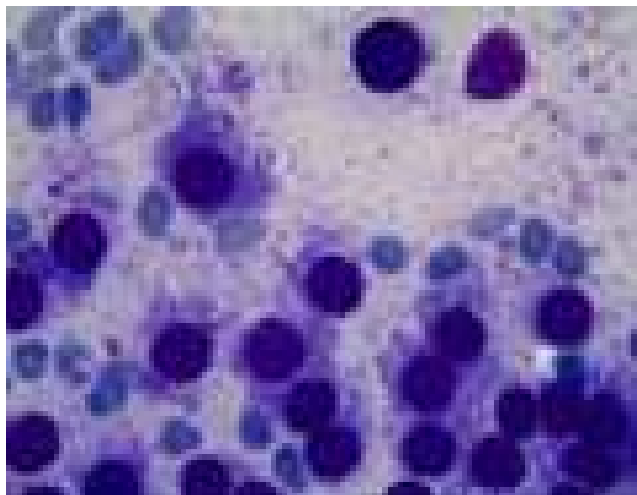
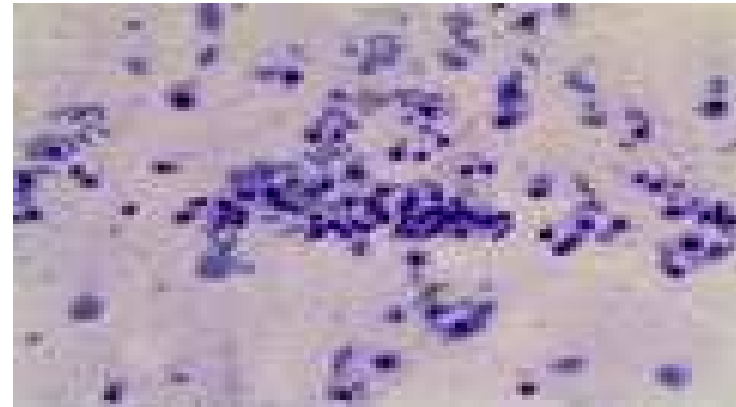
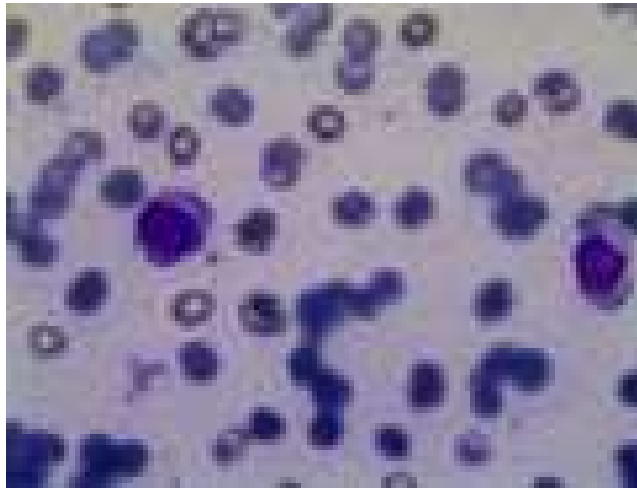
# NUMBER OF POSITIVE DIAGNOSIS

- Lymph node:
  - 2/4
- Blood / Bone marrow:
  - 13/19
- Others (Tumors and Fluids of other systems):
  - 5/5

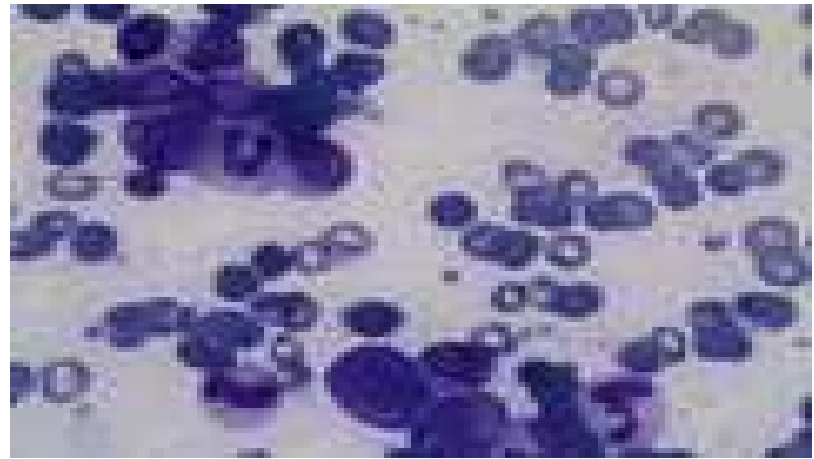
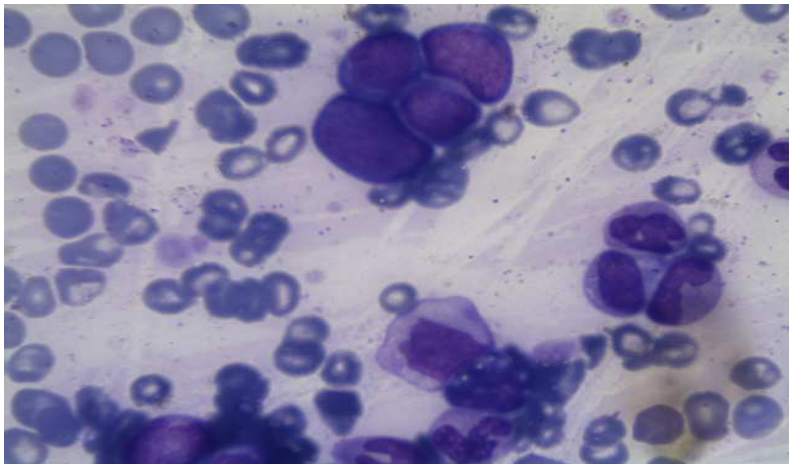
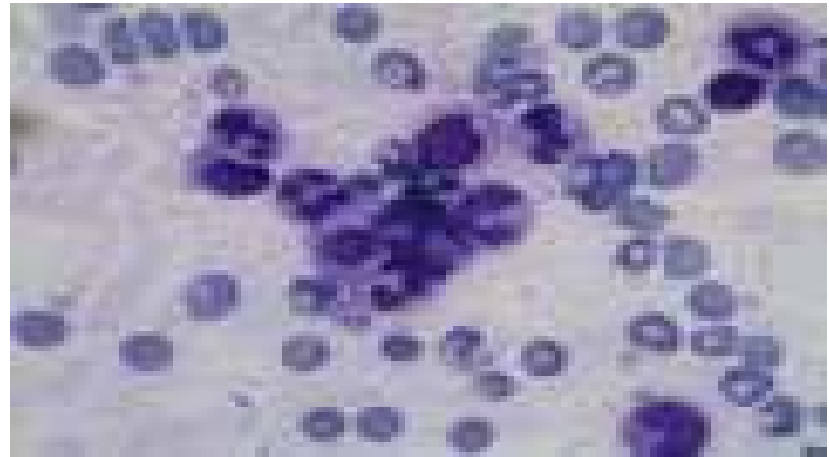
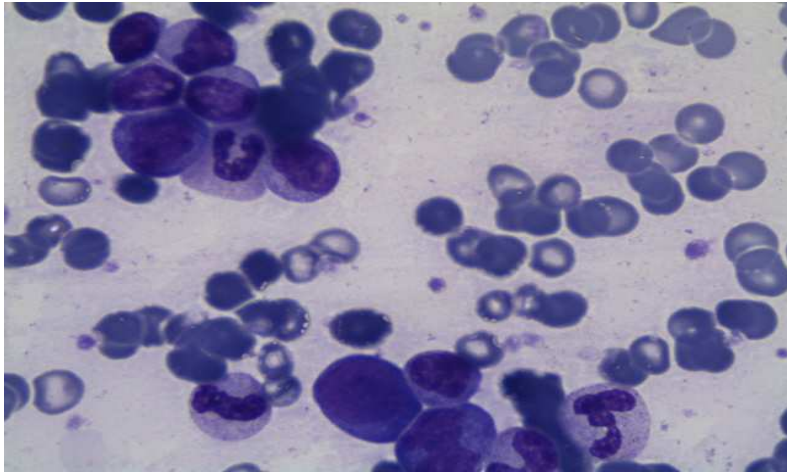
# MALIGNANCIES

- 11 VS 23 (Haematopathology)
  - Lymphoma
  - Leukemia

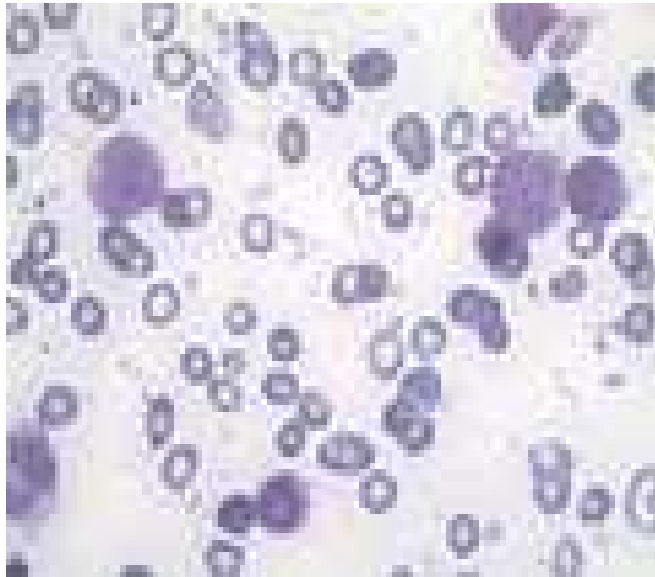
# MULTIPLE MYELOMA (Women 62 years, Typical features of X rays and Serum Protein Blood and Bone Morrow, MGG)



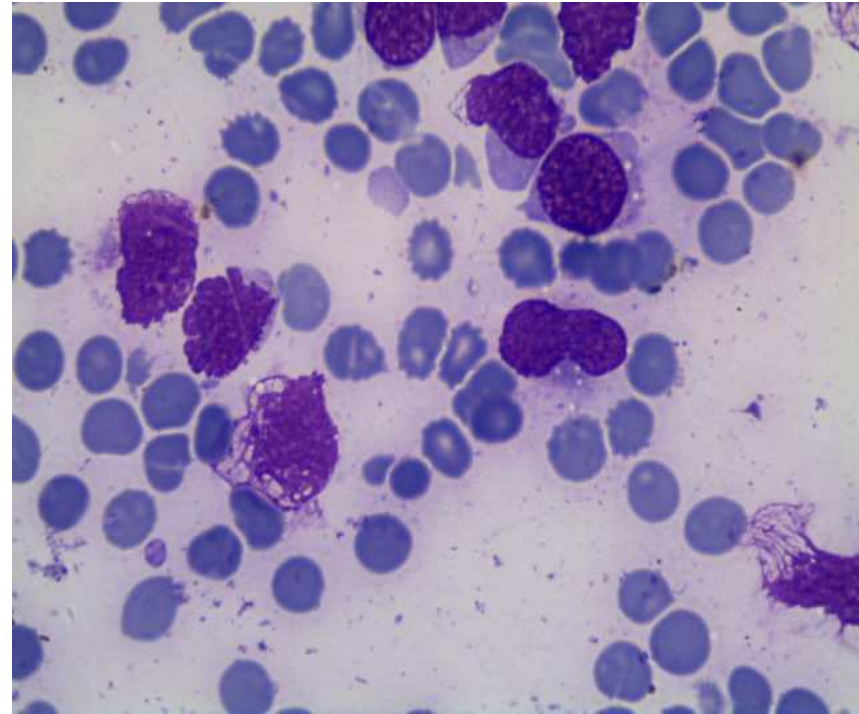
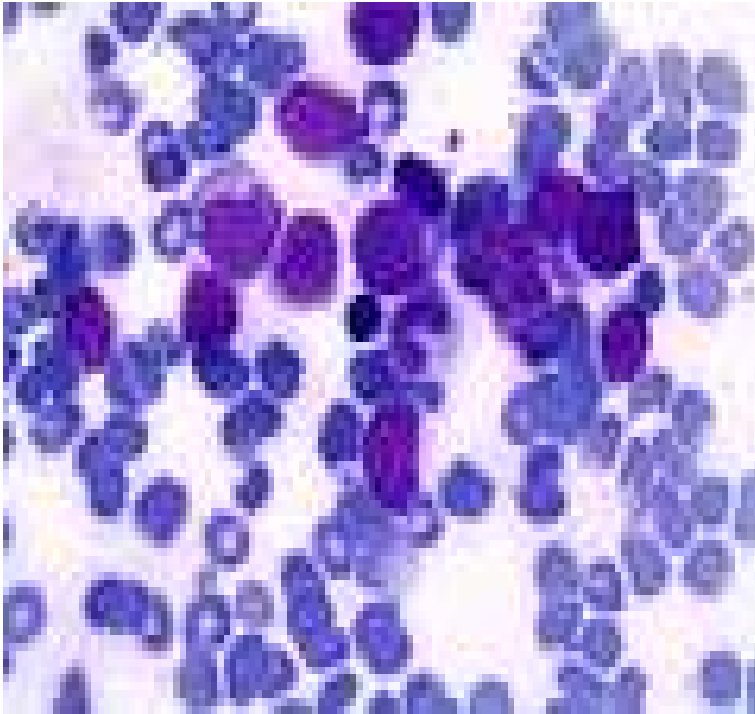
# CHRONIC MYELOID LEUKEMIA: woman 52 years, Anemia, WBC 75000; Blood, MGG



# ACUTE LYPHOBLASTIC LEUKEMIA: boy 10 years, polyadenopathy (BM, MGG)



**BURKITT LYMPHOMA: boy 11 years,  
Hepatosplenomegaly, adenopathy**



# COMMENTS

- Good Experience in some Conditions:
  - Good Techniques
  - Patients Data Evaluable (Clinicians)
  - Pathologists commitment All this Net connexion is done in a friendly and in respect of each other

# TELEPATHOLOGY AS AN EXPERIENCE IN EDUCATION

- Practical teachings For
  - Medical Students
  - Future Pathologists

# CONCLUSIONS

- 28 sets of images were transmitted
- Good response of Networkers
- Confirmation of a good number of diagnosis
  - Needs to improve techniques and images transmission
- Telepathology can be a good help for
  - Lonely Pathologists and clinicians
  - Diagnosis
  - Why not for Treatment

# PERSPECTIVES

- Needs
  - Better Equipments
  - Possibility of immuno-techniques and other special stains
  - Better relationship with clinicians

# ACKNOWLEDGMENTS

- Pr Martine Raphael
- Pr Nina Hurwitz team( Monika Huber)
- Dr Koichi Honma (Dokyo University)
- Dr Alain Gaulier
- Haematopathologists kindly participating to the project
  - » Pr Lorenzo Leoncini,
  - » Dr Dalquen,
  - » Dr Diane Farhi
  - » Dr Jessie Githanga
  - » Dr Blaise Nkegoum
  - » Pr Kikkeri Naresh