

# Case Study in lymphomas

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# Case history 1

## Part 1 Initial presentation

- 20 year old girl, living in Sidcup
- Presented to you with a 3-4 months' history of lower back pain. She tells you she went to her GP practice and was seen by one of the locum GPs two weeks ago. She was reassured and asked to take some simple analgesia.
- She has returned because the pain now radiates down both legs.
- She was previously fit and healthy and not on any medications. Her maternal aunt died from melanoma at the age of 45 although the aunt used to use sunbeds.
- She smokes and consumes alcohol mainly during weekends. She lives with her parents and works as an administrator in a university.



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# What additional information would you elicit?

- 1) Weakness, parathesias, numbness
- 2) Sphincter disturbances
- 3) Urinary symptoms
- 3) Other neurological symptoms
- 4) Fever, weight loss
- 5) Hobbies
- 6) Trauma history
- 7) Others



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# What examination and investigation would you perform?

- 1) Full neurological examination
- 2) Full blood count
- 3) ESR, CRP
- 4) MSU
- 5) Lumbar spine X-ray
- 6) MRI spine



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- She does not report any other relevant symptoms, and you do not find any additional abnormalities on your examination.



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# What are your differential diagnoses?

- 1) Slipped disc
- 2) Other musculoskeletal disorder
- 3) Connective tissue disorder
- 4) Malignancy
- 5) Infection such as TB, urinary tract infection
- 6) Multiple sclerosis



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# What management plan would you institute?

- 1) Analgesia
- 2) X-ray/MRI
- 3) Physiotherapy
- 4) Review in 2 weeks
- 5) Referral to hospital specialists
- 6) Others

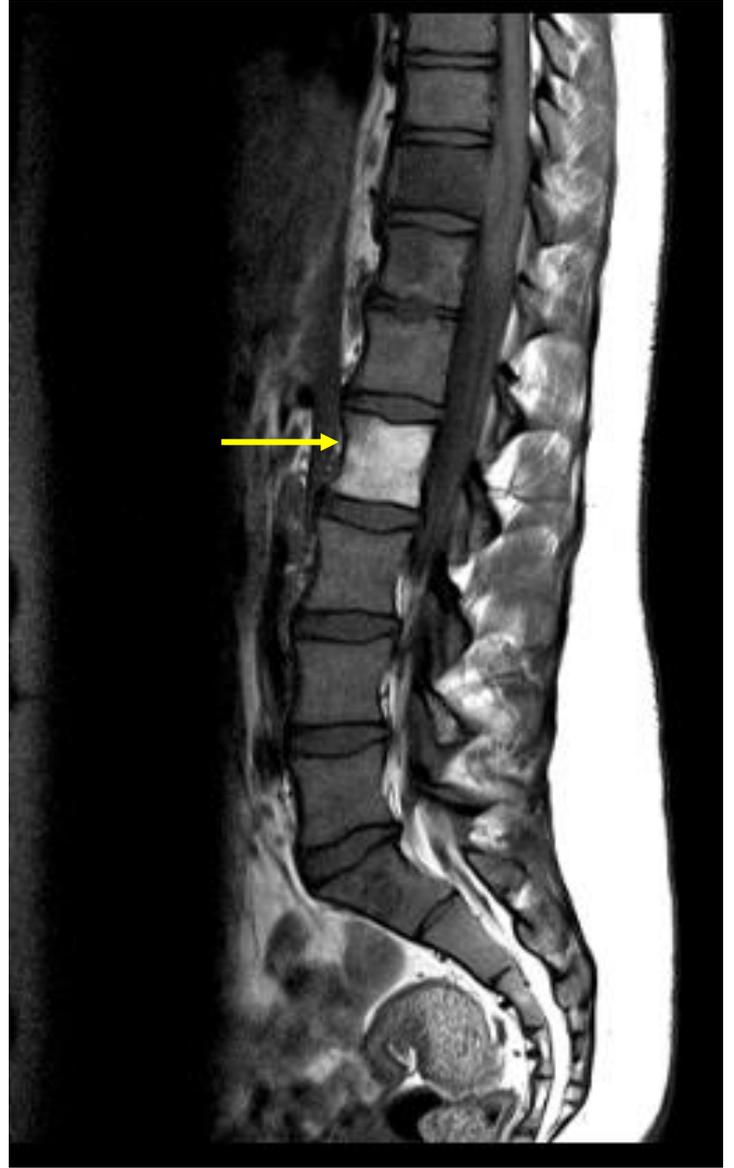
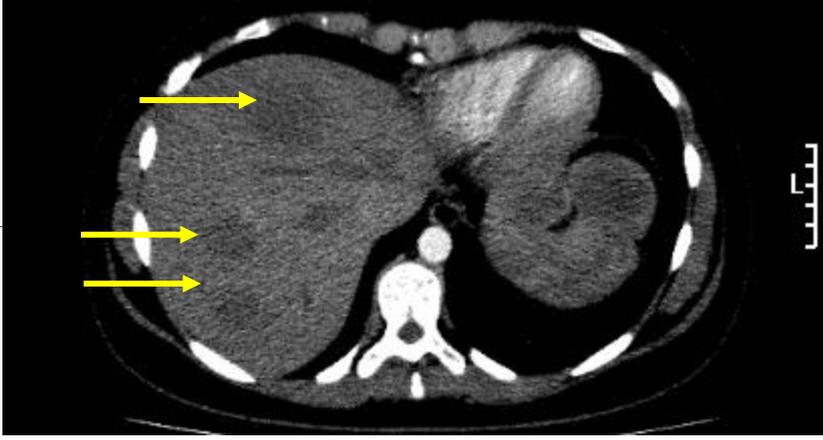


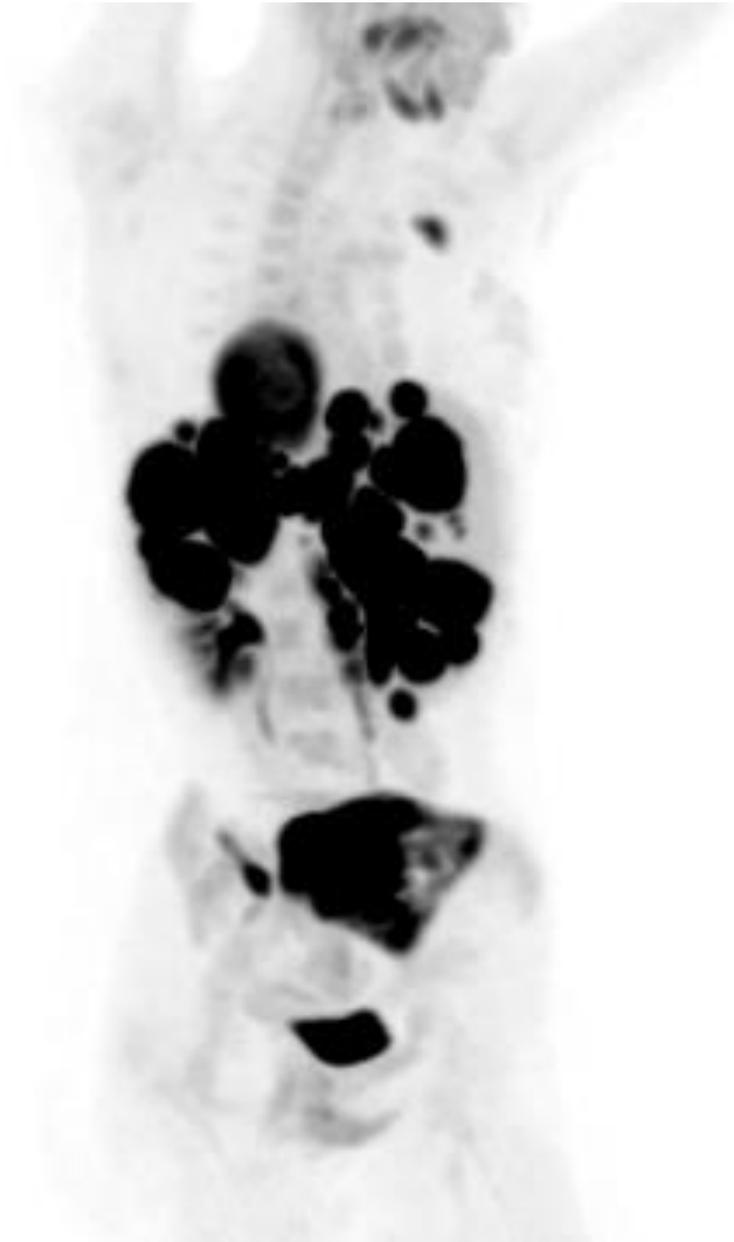
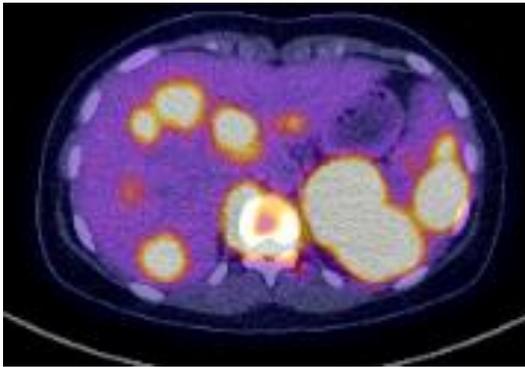
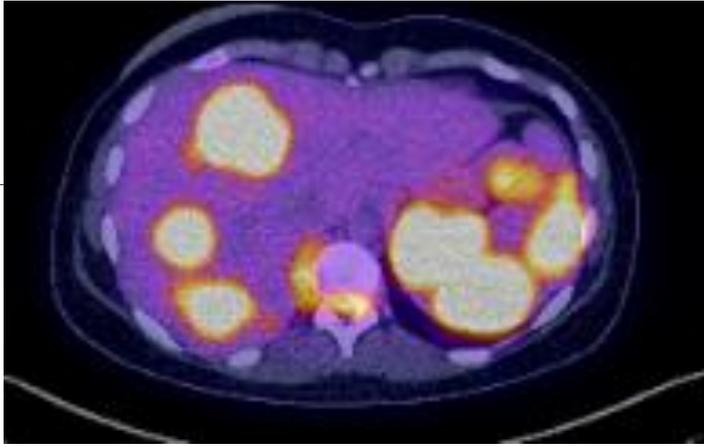
# Case history 1

## Part 2 Return to GP surgery

- **The patient was referred to physiotherapy. After physiotherapist assessment, she was advised to be prescribed naproxen. In addition, she was advised on an MRI scan of the spine. She attended for a MRI scan in Lewisham Hospital on Saturday. She was phoned by her physiotherapist on Sunday who told her there was abnormality on MRI scan and she should attend her local A&E the next day for assessment and CT scanning.**
- **The MRI scan showed large paravertebral soft tissue mass involving the epidural space compressing the distal spinal cord. There was also bony expansion and destruction in the right ilium and sacrum across the SI joint. Numerous lesions were seen in the liver.**
- **CT scan showed the above plus enlarged celiac axis lymphadenopathy, lymphadenopathy in the porta hepatis as well as left para-aortic lymphoma nodes. There were multiple bone metastases. No primary was visualised.**







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# Case history 1

## Part 2 Return to GP surgery

- **She was transferred from her local hospital to The Royal Marsden.**



# Royal Marsden Hospital Teenage and Young Adult Unit (16-24 years old)



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# Case history 1

## Part 2 Return to GP surgery

- **She was transferred from her local hospital to The Royal Marsden. An urgent liver biopsy was performed. As patient was now pain free and she was eager to be discharged, she was discharged home with a follow-up out patient appointment in 6 days' time.**
- **The patient is terrified and comes with some printed internet pages and lots of questions to your practice.**



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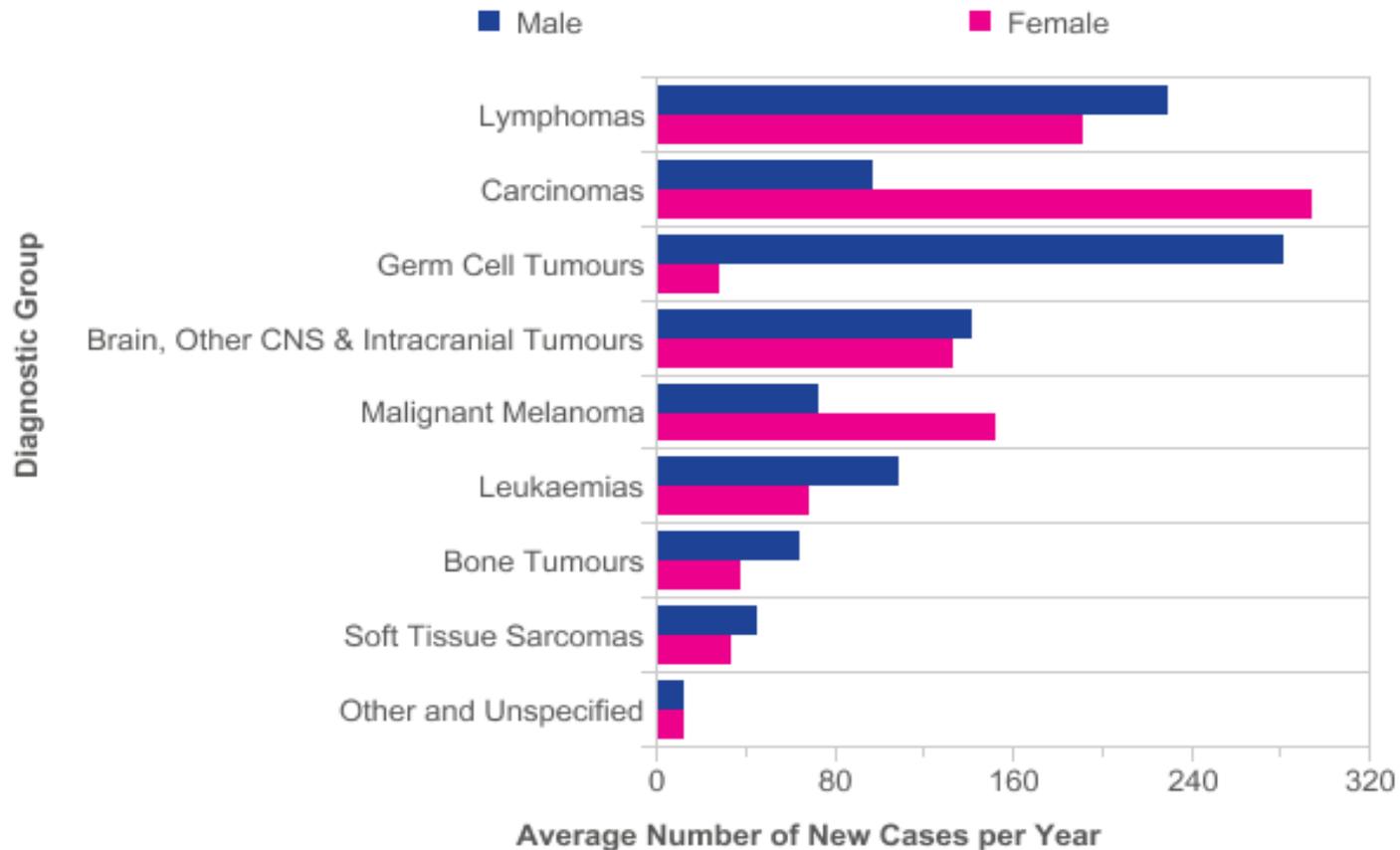
If we assume she has cancer, what are the common cancers in this age group (20 years old)?

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- 1) Lymphoma
- 2) Carcinoma (unknown primary, breast ovary, cervix, thyroid etc)
- 3) Brain and CNS tumours
- 4) Malignant melanoma
- 5) Sarcoma
- 6) Germ cell tumours
- 7) Acute leukaemias



# Teenage and Young Adult Cancers by Diagnostic Group: 2000-2009



Average Number of New Cases per Year, Ages 15-24, UK

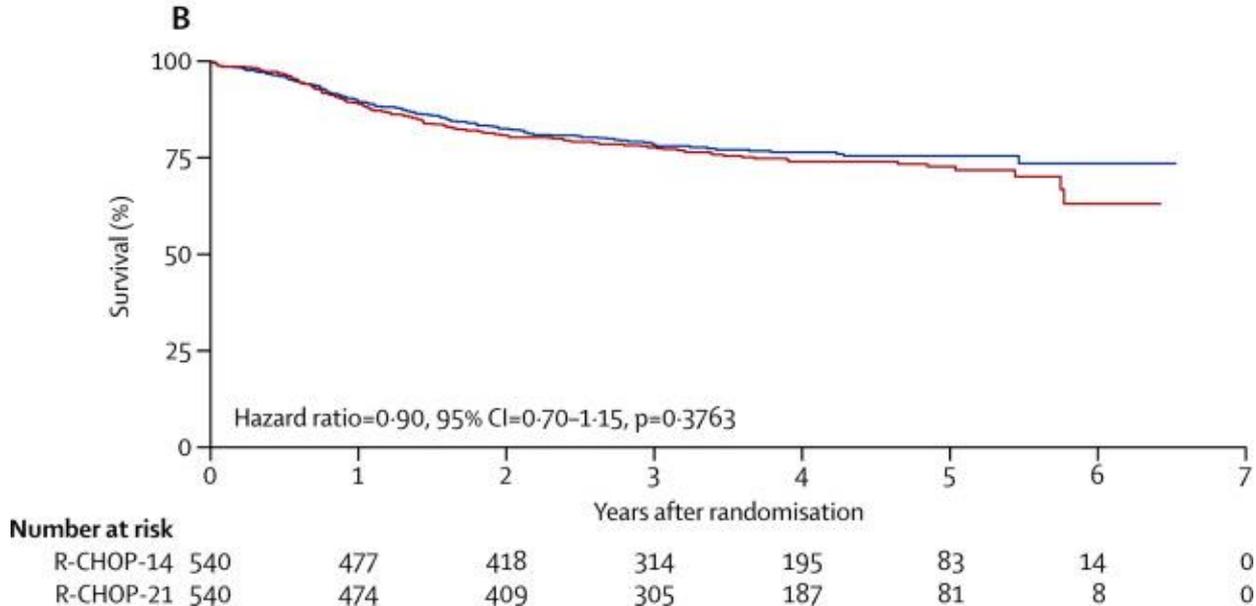
## How likely is lymphoma as her diagnosis?

- Lymphomas form the most commonly diagnosed group of cancers in teenagers and young adults overall
- They account for 21% of the total cancers in this age group
- Male: female ratio of 12:10
- Two main types of lymphoma: Hodgkin lymphoma accounts for around two-thirds (68%) of all lymphomas in 15-24 year olds, and non-Hodgkin lymphoma (NHL, 32%)
- This contrasts with the distribution of lymphomas in childhood, where Hodgkin lymphoma accounts for less than half of all lymphomas in 0-14 year-olds and with the distribution in those aged 25 and over, where Hodgkin lymphoma makes up around a tenth of all lymphomas (11% in the UK between 2008 and 2010)



# Is she going to die? If so, how quickly will she die?

- Despite stage IV disease, patients can still be cured
- In R-CHOP 14 vs. 21 trial, ~70% of stage IV patients were still alive at a median follow-up of 46 months



# The patient would like to have children. Should she go and see a fertility preservation expert?

- R-CHOP chemotherapy can cause infertility
- Alkylating agents are the most potent gonadotoxins
- Much higher dose of drug tolerated by females
- Most established option for female is embryo cryopreservation (pregnancy rate: 30-40%)
  - Patient undergoes ovarian stimulation for the in vivo maturation of oocytes
  - Subsequent retrieval of mature oocytes prior to beginning chemotherapy
  - Oocytes are then fertilized when they are retrieved
    - resultant embryo cryopreserved
  - Need partner or donor's sperms



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- Oocyte cryopreservation for females who do not have a partner and who do not wish to use donor sperm
- Oocytes are very fragile and difficult to cryopreserve
- Still requires ovarian stimulation



# Case history 1

## Part 3 Management in primary care

- Patient returned back to oncology clinic
- Liver biopsy showed diffuse large B cell non-Hodgkin's lymphoma
- She completed her staging investigations including a PET scan and a bone marrow biopsy - Stage 4A disease
- Commenced on R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, prednisolone) chemotherapy
- Agreed to participate in a therapeutic clinical trial of adding a new cancer drug to R-CHOP chemotherapy.



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# What are the side effects you need to look out for?

- Infusion related reaction: fever, hypotension, rash, rigors
- Neutropenia and febrile neutropenia
- Alopecia (total)
- Nausea and Vomiting
- Stomatitis and diarrhoea
- Constipation
- Neurotoxicity
- Steroid-induced side effects



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# Case history 1

## Part 3 Management in primary care

- **The patient completed chemotherapy after 5 months and was told that she is in complete remission.**
- **She comes to your practice after another 3 months and has a series of questions.**



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# When can she become pregnant?

- 
- At least one year



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## Case history 1

### Part 3 Management in primary care

- **She tells you that the hospital is optimistic about her chance of cure, but she is worried as to whether there are any other treatment options if it were to recur.**



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# What treatment options are available to a patient with recurrent diffuse large B cell non-Hodgkin's lymphoma?

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- Second line platinum-based chemotherapy
  - DHAP
  - ESHAP
  - GEM-P
- High dose chemotherapy and autologous stem cell transplantation



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