

Post-industrial occupational lung disease

Mark Longshaw
Consultant Physician

Declarations of interest

- NHS employment: Barnsley and Manchester
- Honorary: University
- No sponsorships

Learning outcomes

- Understand the legacy of occupational exposure to patients in Barnsley
- Understand the importance of a detailed occupational history
- Understand the management of patients with occupational lung disease
- Understand a little about the law and how it relates to patients

Off limits for today

- Assessment of patients in current employment with new OLD
- HSE
- Sheffield OLD service

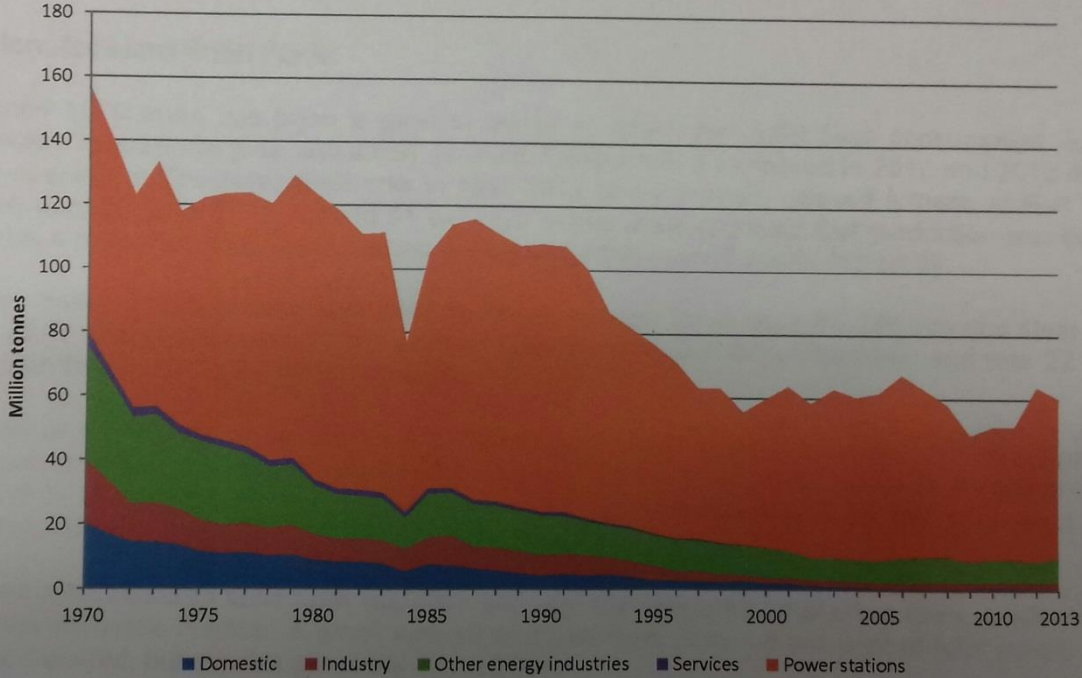
Chris Skidmore

- Some personal insights in supporting patients
- Case histories
- When we get it right
- When we get it wrong





Chart 4: Coal consumption 1970 to 2013



Within the lifetime of our patients

- 1954: 1334 deep coal mines in the UK, producing 228 million tons of coal
- 2013: 3 deep coal mines producing 4 million tons
- 2015: closure of last deep coal mines in UK
- 21st April 2017: first day since industrial revolution where no coal was used to generate electricity in UK



State Of The Coalfields

In the coalfields, one-in seven adults of working age are on out-of-work benefits

- Coalfields out-of-work benefit claimant rate: 14.1%
- GB average: 10.9%
- South East England: 7.6%

There are 50 jobs in the coalfields for every 100 residents of working age

- GB average: 67 per 100
- London: 79 per 100
- South Wales coalfield: 41 per 100

Across the coalfields 8.4% of all adults of working age are out-of-work on incapacity benefits

- South Wales coalfield: 11.2%
- Durham coalfield: 9.1%
- South East England: 4.5%

People reporting 'bad or very bad' general health

- Across the coalfields: 7.6%
- South East England: 4.3%

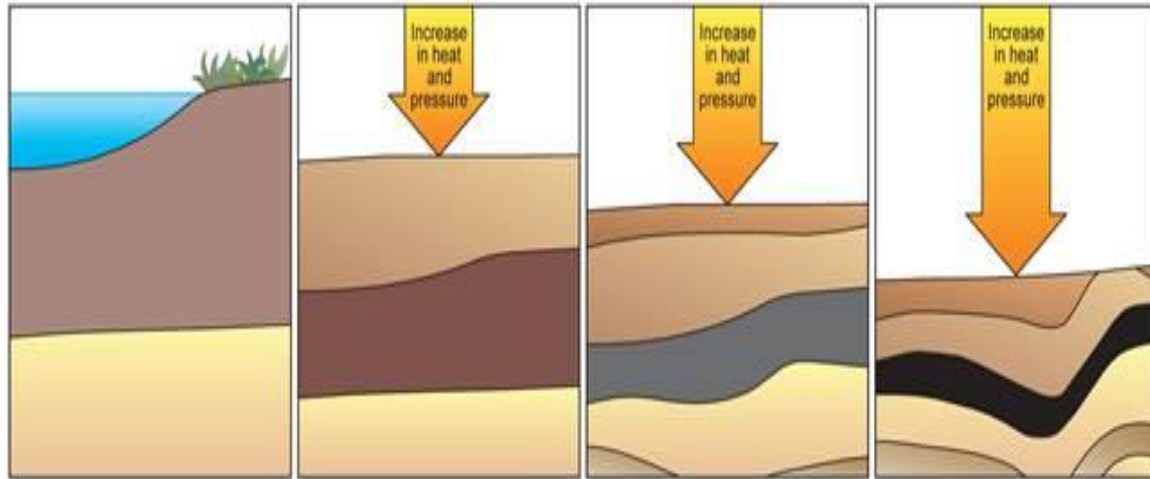


Sheffield
Hallam
University

 the coalfields
regeneration trust
changing the face of coalfield communities

Legacy for our patients

- Depending on precise area, coal mining may have provided almost all of the jobs in a community
- An understanding of the working conditions, and the effect on health, is vital



Increase in coal rank



Peat

Brown coal

Sub-bituminous

Bituminous

Trades

- Mining (and all of its sub-types)
- Blasting
- Engineering
- Electricians
- Plumbers
- Blacksmiths and Farriers
- Carpenters

Potential exposures

- Coal dust
- Silica
- Asbestos
- Methane and other volatiles
- Wood dust
- Cigarette smoking

Potential diseases

- Simple Coalworkers' Pneumoconiosis
- Progressive Massive Fibrosis
- Silicosis
- Asbestos related diseases
- COPD



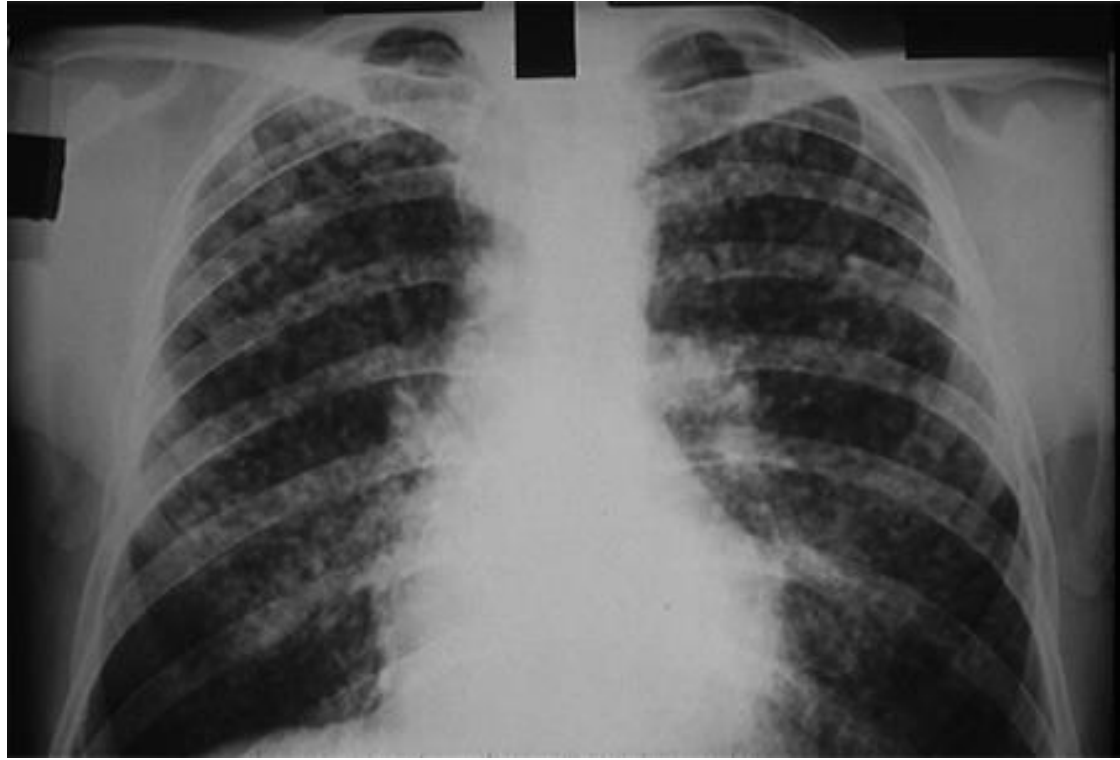
Simple Coal Workers' Pneumoconiosis

A short history

- “Black Lung” identified at autopsy in Scottish Coal Miners in 1831
- 1943: extension of Workmen’s Compensation Act to include CWP
- Place of work screening from 1950s
- Prevalence falling (in miners with 25 year working history) from 1 in 3 in 1970s to 1 in 10 in 2000s

Diagnosis

- Chest X ray appearance
- History of working with coal dust
- Exclusion of other diagnosis



Pathology

- Coal dust is fibrogenic
- Macrophages are activated
- Carbon cannot be broken down or removed
- Formation of macules then nodules
- Slow progression

Clinical presentation

- Exertional dyspnoea
- Normal chest examination
- Normal spirometry

Management

- Detailed occupational history
- No treatment
- Avoid further exposure
- Advise patient of diagnosis
- Signpost support from Trades Union
- Signpost Industrial Injuries Disablement Benefit

IIDB

- Strictly both a “benefit” and a “compensation”
- A number of trades, but locally “10 years or more working in coal mining”
- Working as an employee or a contractor in a mine licensed by the National Coal Board or the British Coal Corporation

In addition lump sum may be paid if

- Above criteria met
- Claim within 12 months
- No previous lump sum payment

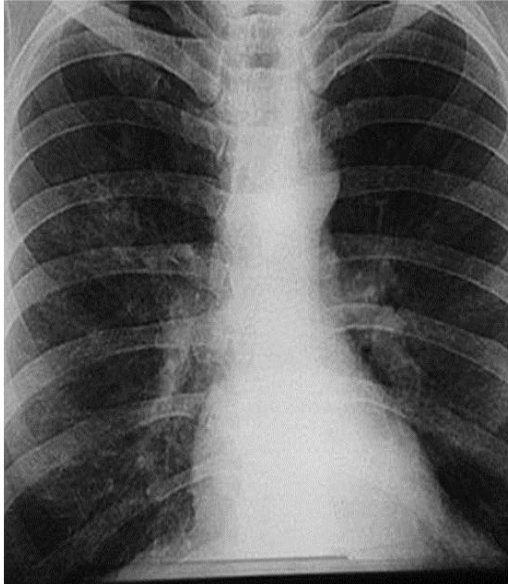
At death

- If patient in receipt of IIDB, Coroner should be notified
- If occupational history suggestive, discuss with Coroner
- A dependant may make a claim within 12 months of death

In a living patient

- Important to remember that disease may be progressive
- Disease severity and diagnosis might change over time

A

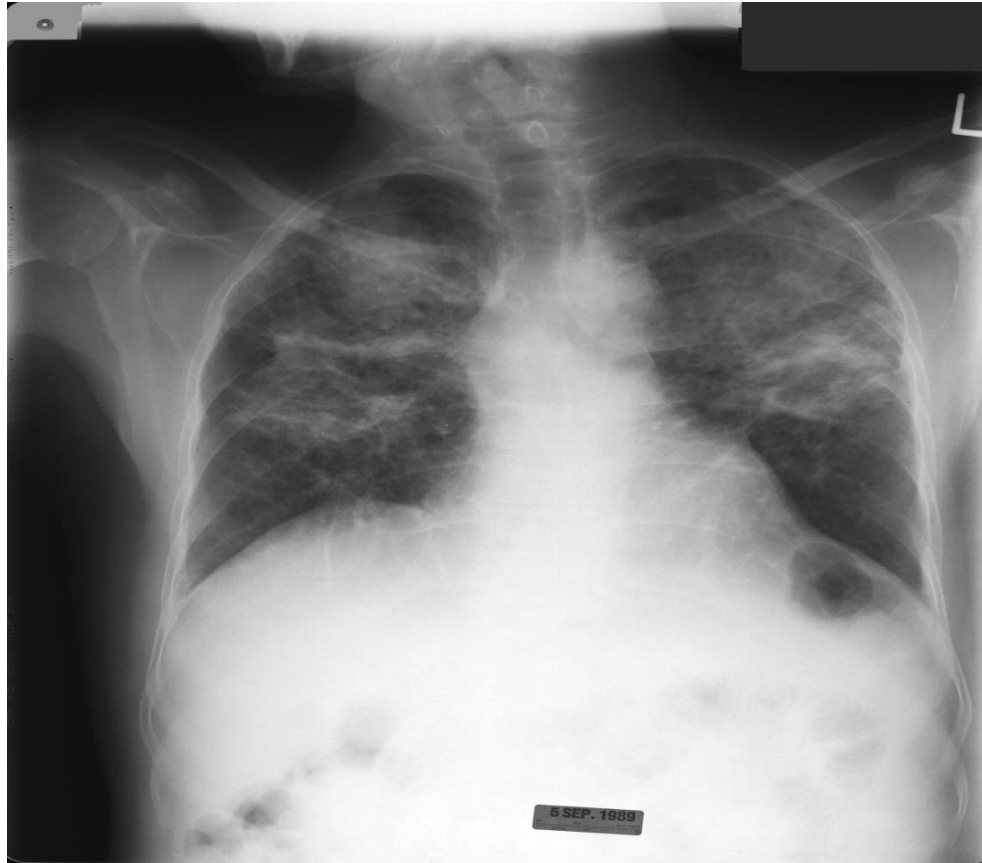


B



Progressive Massive Fibrosis

- Essentially, the development of silicosis in a patient who has CWP
- Silica is intensely more fibrogenic
- Similar diagnostic criteria, with typical radiographs



Silicosis

- Worldwide, the most common form of pneumoconiosis, particularly in developing countries (46 000 deaths in 2013)
- Some legacy industries in South Yorkshire (grinding, glass making)
- Majority of cases arise from mining industry

History

- First described in 1796 in grinders
- Recognised in Workers' Compensation Act 1918
- Expansion to various industries including refractories, pottery, metal grinding
- Coal Miners recognised from 1930

Presentation

- Exertional dyspnoea
- Cough
- Crackles may be present
- Spirometry may be restrictive

Progressive

- May be rapid
- Supportive treatment
- May be “complicated” with CWP, Rheumatoid Disease, TB, NTBM and the development of lung cancer

Interstitial Lung Disease

- Diagnosis is Prognosis
- A detailed occupational history is necessary
- Discussion at a MDT important for complex cases
- Labelling patients as having “IPF” when they don’t does them a disservice

Asbestos related lung disease

- Trades associated include electricians, plumbers, carpenters, steelworkers, builders, labourers, mechanics, plasterers and decorators and many more

Time lag

- Up to 30 year delay between exposure and onset of disease
- Single exposure may lead to pleural disease
- Volume exposure directly related to asbestosis risk
- Lung cancer and mesothelioma remain lifetime risks

Disease

- (Pleural plaques)
- Diffuse bilateral pleural thickening
- Asbestosis
- Mesothelioma
- Lung cancer

COPD

- Remember that COPD is an occupational lung disease
- Management includes making a diagnosis, stratifying severity, smoking cessation, pulmonary rehabilitation, influenza vaccination and optimisation of inhaled therapy
- Signposting to IIDB

Lung cancer

- Not strongly associated with coal mining, but please consider in patients with history of silicosis or asbestos exposure

In Barnsley

- Historically low reporting to all systems
- Disease prevalence appears high
- Confusion amongst patients and reporters

Proposal

- Development of an occupational lung questionnaire
- Incorporation within shared record
- Take best bits from SWORD, HSE, OSCAR
- Flag on EPACCs

Summary

- Understood the legacy of occupational exposure to patients in Barnsley
- Understood the importance of a detailed occupational history
- Understood the management of patients with occupational lung disease
- Understood a little about the law and how it relates to patients

Comments and questions

- Breathe.Service@nhs.net