

# Neoplasia and the nonagenarian

The number of nonagenarians living an independent lifestyle is increasing and, with baby boomers growing older in a more healthy manner, is set to rise proportionally. Neoplastic change increases with age but many cancers in the elderly are occult until a clinically important event causes rapid decline. **Drs Gavin Brigstocke, Moshkan Poormolkara and Jonathan Birns** set out the social background and illustrate events with a likely case scenario.

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In the 21st century people in Britain are living longer, reflecting long-term progress in improving standards of living and health through individual endeavour and social investment<sup>1</sup>. The absolute and relative numbers of elderly individuals are increasing and it has been calculated that there will be an approximately 100 per cent increase of people aged 80 and over in the developed world<sup>2</sup> during this century. Indeed, current demographic estimates suggest the elderly are the fastest growing section of the population.

The Government Actuary's Department projects that by 2051 the average 65-year-old will expect to reach almost 90 years<sup>1</sup> and, as the baby boomer generation reaches 65 to 70 years of age by 2015, we will experience further societal change with increased numbers of nonagenarians and centenarians<sup>3</sup>. Population studies have described a significant proportion of nonagenarians living an independent lifestyle in their own home with important personality characteristics being a sense of responsibility, capability and emotional stability<sup>4</sup>.

One great risk factor for cancer is ageing and human cancer incidence increases exponentially with age<sup>5</sup>. Cellular models of carcinogenesis have demonstrated that ageing predisposes to the convergence of genetic changes, accumulation of tissue damage and an increasingly permissive local environment for tumour growth<sup>6-7</sup>. A number of neoplasms either show an indolent course, increase

in size or metastasise without causing symptoms initially<sup>8</sup>. In the very elderly, these cancers may grow considerably without affecting the individual until a clinically critical event due to a primary or secondary neoplastic lesion causes rapid decline. This important clinical scenario is illustrated by the case described in Box 1 (*see overleaf*).

Despite significant 'neoplastic disease load' the very elderly may be relatively asymptomatic. Indeed, studies have shown that up to 29 per cent of elderly cancer patients may be asymptomatic at the time of diagnosis<sup>9</sup>. Because the elderly are likely to be less active, it may be argued that occult metastatic disease may continue to develop in them without affecting lifestyle in contrast to a younger individual whose activities would become more obviously limited.

While elderly cancer patients may have no overt medical complaints prior to a delayed presentation, unintentional weight loss is not uncommon. Indeed, neoplasia is the most common occult cause of unintentional weight loss in the elderly, accounting for 16–36 per cent of cases, and weight loss is often the only symptom of neoplasia<sup>10-12</sup>. Up to one-quarter of elderly patients have unintentional weight loss and it has been documented that a significant proportion of elderly people do not complain about losing weight or, less commonly, mistakenly attribute weight loss to successful diet or lifestyle modifications<sup>13</sup>.

## Key points

- The number of nonagenarians living an independent lifestyle is increasing.
- Neoplastic change increases with age.
- Many cancers in the elderly are occult until a clinically important event causes rapid decline.
- Metastatic disease associated with large primary tumours may be asymptomatic for a considerable time period.

Compared with younger cancer patients, the elderly have been shown to have increased metastatic disease<sup>14</sup> but, as described, this is often lacking in symptoms. It has been suggested that elderly patients with occult disease are somewhat 'meta-stable' in that they retain functional independence until a clinically important event destabilises the 'milieu interieur' causing rapid clinical decline<sup>8</sup>. The clinical deterioration is then often exceptionally rapid in keeping with the newly uncovered biological profile. As the proportion of elderly patients increases in society, clinicians need to be aware of occult cancer as an important cause of unintentional weight loss and the potential for very rapid clinical decline subsequent to a delayed presentation of 'neoplasia in the nonagenarian'.

**Conflict of interest: none declared.**

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## Box 1. Case scenario

A male Caucasian nonagenarian presents to the emergency department with a one-week history of left-sided visual deficit, worsening confusion and decreasing independence. Systemic review reveals a year-long history of unintentional but significant weight loss that had not troubled him. He denies any previous medical history, regular medications, cigarette or alcohol use. A widower, he lives alone and has been functionally independent prior to his presentation.

Physical examination reveals decreased expansion, dullness to percussion and reduced air entry over the left hemithorax, a left homonymous hemianopia and an abbreviated mental test score. Laboratory investigations reveal a normocytic anaemia and a chest x-ray reveals a large lobulated soft tissue density mass projected over the left hemithorax.

CT imaging confirms the presence of a primary peripheral bronchogenic carcinoma with mediastinal, abdominal and cerebral metastases, and a haemorrhage into a metastatic lesion in the right occipital lobe. The patient is provided with steroid treatment and supportive therapy but he dies very soon after.