The Association of Anaesthetists of Great Britain & Ireland: The Wylie Medal 2013

The importance of meeting Ernest.

"An elderly patient who changed my views on anaesthesia."

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NB: Please be aware that fictitious names have been used below to maintain confidentiality.

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"My date of birth? Certainly. It's the twenty-fourth of September, nineteen twenty-one."

"Nineteen twenty-one?" I can hardly conceal my surprise.

"Yes." A hint of a smile creeps into the corner of his mouth. He knows what is coming. In retrospect, he's probably had the same line delivered countless times through his implausibly long life.

I don't disappoint. "You don't look it."

In the time it takes my own withering brain to calculate his age his smile has grown and now extends almost from ear to ear.

"I get that a lot."

I'm not surprised. I take a moment to look at Mr Ernest Kenway again. He's a tall slim gentleman with a rigidly relaxed posture; his feet, encased in weathered but sturdy brown boots, are firmly planted on the ground; his knees, hidden behind well-pressed light beige chinos, are bent to near ninety degrees; and his arms, cloaked in the long sleeves of his blue and white checkered shirt, are lying along the faux wood armrests of his pastel green NHS issue armchair. His nose is pointed but not excessively sharp; his cheekbones are well demarcated but not obtrusively so; and his head is topped by a thick but closely cropped patch of silvery-white hair. The only features that belie his true age are the spoke-like pattern of numerous minute wrinkles radiating out from his brilliant blue eyes and the plain J-shaped wooden walking stick hanging from the headboard of his pre-admission unit bed. In short, this isn't what I expected from a ninety-one year old on an orthopaedic list. As first impressions go, Kellgren & Lawrence grade IV osteoarthritis of the hip looks quite pleasant.
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“Do you have any ongoing medical problems? Are you on any regular medication?”

For a man in his tenth decade of life, Mr Kenway’s medical history is remarkably unremarkable. Aside from a childhood appendicectomy and an episode of pneumonia over thirty years ago he seems to have kept a clean bill of health for most of his life. It’s possible that his career in the navy is the major contributing factor; one can only imagine the long term health benefits of forty years of intensive physical activity with regular military medicals. Or perhaps it’s more a reflection of his determined personality; even as a retiree he ran marathons for fun, and then when his knees could no longer keep up he started long distance cycling. Or maybe it’s just a result of his constitution; he’s a lucky winner of the genetic lottery.

Whatever the cause for delay, it seems inevitable that age catches up with us all eventually. Aged eighty-seven, and troubled by right hip pain, he reluctantly went to see his GP. It was as he feared: osteoarthritis. With the diagnosis came a prescription for paracetamol (one gram four times a day) and the acknowledgement of age. In the time since, his hip has held up remarkably well. Even with old creaking joints Mr Kenway was still a keen walker. Then in the last twelve months things started to deteriorate. The choice was clear: take his chances in the operating theatre, or live on with the pain and the prospect of progressive immobility.

“Do you have any allergies? Any problems with anaesthetic drugs in the past?”

Four days into my placement in peri-operative medicine and I’m developing a vague idea of what anaesthetists are interested in. It’s all about risk. Rather, it’s all about *minimising* risk. However in this case I’ve thus far identified no concerning factors; indeed Mr Kenway’s biggest risk seems to be his age. But is age in the absence of medical co-morbidities a concern? I think for a moment and then the realisation dawns. Disease and health are not distinct entities in a dull binary system but rather two ends of a glorious Technicolor spectrum. As there are different degrees of disease so too there are different degrees of health, and therefore it is a logical fallacy to assume that the absence of symptoms indicates perfect physiological function. It is the functional reserve - the capacity of a system that is surplus to normal requirements but can be recruited in response to increased demand - that is important to consider here and which naturally diminishes with age, even in the absence of specific pathology. I decide to change tack.

“What’s your exercise tolerance like? How far can you walk before you need to rest?”

The cacophony of beeping in theatre is a testament to the fact that anaesthetists are obsessed with cardiorespiratory physiology. Understandably so, given the speed at which cardiorespiratory problems can arise and severity of the consequences. Arterial hypotension, the most common haemodynamic complication of anaesthesia, tends to be more pronounced in older patients due to age-related deficiencies in autonomic homeostasis [1-2]. Likewise poorer respiratory effort, age-dependent loss of alveolar surface area, and impaired central ventilatory responses to hypoxaemia may all contribute to increased incidence of peri-operative hypoxaemia in the elderly [1,3]. Consider then the consequences of such cardiorespiratory disturbances on end organs, which themselves may suffer from age-related loss of functional reserve, and the problem seems compounded.

But it's not just issues with cardiorespiratory function that complicate anaesthesia in the elderly. Renal function deteriorates by 10% for each decade over the age of 40 years, increasing the risk of post-operative renal failure with fluid retention [4]. Altered autonomic neurological function predisposes the elderly to peri-operative hypothermia [5]. Decreased cognitive reserve may manifest as increased incidence in acute confusional states [6]. Anaesthetic agent pharmacokinetics may be modified by renal function, hepatic function and body tissue composition [7]. The list goes on.

At the best of times, anaesthesia in the elderly is complicated; the potential for physiological mayhem is astounding when the baseline is unclear. It's not surprising therefore that older surgical patients have such poor outcomes relative to their younger counterparts [8-10]. The temptation would be to avoid older patients entirely by setting some arbitrary threshold beyond which anaesthetists might be allowed to hide their proverbial heads in the sand. But none of us can escape from epidemiology; the population is ageing [11] and we need to adapt. Perhaps then medical students might not be so surprised to see nonagenarians happily occupying beds in the pre-admissions unit.

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