Seamstress’s finger

C J M Poole

The term seamstress’s finger can be found in medical texts, but a search of publications over the past 45 years failed to reveal a good description of the condition. I describe here three cases in sewing machinists employed for many years in the same factory in the production of seat covers for cars. The work was paced, repetitive, and performed in a stereotyped way.

Case 1
A 56 year old right handed woman was seen with a two to three year history of aching in her right index finger. She had no other symptoms, there was no history of trauma to her hands or medical history of note, and she was taking no medication. She had worked as a sewing machinist in the same factory for 28 years and did dress making in her spare time.

She had a flexion deformity of the distal interphalangeal joint of the right index finger. There were prominent Heberden’s nodes on the index and middle fingers and thumb of the right hand. Smaller Heberden’s nodes were present on the index finger and thumb of her left hand. There was a prominent callosity on the right middle finger due to repeated friction from metal scissors. There were no signs of joint hypermobility. x Ray films of her hands showed loss of joint space, articular sclerosis, osteophytes, and bone cysts (figure). There was a particularly prominent dorsal osteophyte from the proximal end of the distal phalynx of the right index finger (figure). She was negative for serum rheumatoid factor.

Case 2
A 56 year old right handed woman was seen with pain in the fingers of her right hand and weakness of grip in this hand. There was no relevant medical history. She had worked as a sewing machinist in the same factory for 16 years and for the four years before that as a seamstress. She made clothes and curtains in her spare time.

There were Heberden’s nodes on the index, middle, and ring fingers and thumb of her dominant hand, but not her left hand. There was a callosity and lateral deviation of the terminal phalanyx of the right ring finger from repeated use of metal scissors. There were no signs of neuropathy in the right hand and no evidence of joint hypermobility. x Ray films of her hands showed loss of joint space, artic-
ular sclerosis, osteophytes, and bone cysts at the
distal interphalangeal joints of the index, middle,
and ring fingers of the right but not the left hand.
She was negative for serum rheumatoid factor.

Case 3
A 54 year old right handed woman was seen with
pain in her right thumb, neck, and lower back. In
the past she had been diagnosed as having cervical
spondylositis, spina bifida occulta, tennis elbow, and
bilateral carpal tunnel syndrome. There was no his-
tory of trauma to her right hand and she was taking
ibuprofen for analgesia. She had worked as a
sewing machinist in the same factory for 22 years.
She had Heberden’s nodes on the index and
middle fingers of her right hand. There was tenderness
over the carpometacarpal region of the right
thumb and the distal phalynx of the right ring
finger was deviated laterally. There were no signs of
joint hypermobility. X Ray films of her hands showed loss of joint space, articular sclerosis, osteo-
phytes, and bone cysts in the distal interphalangeal
joints of the index, middle, and ring fingers and
sclerosis at the trapezioscapoid articulation of the
right hand. The distal interphalangeal joint of the
right ring finger was sub-luxed. She was negative
for serum rheumatoid factor.

Discussion
Three cases of seamstress’s finger are described in
women who had worked as sewing machinists or
seamstresses for more than 20 years. They all had
osteoarthritis of at least one of the distal interpha-
langal joints of the dominant hand and one had
osteoarthritis at the base of the dominant thumb.
Radiological evidence of osteoarthritis was either
absent or present to a much lesser degree in the
non-dominant hand. Two of the ladies had lateral
development of the terminal phalynx of their ring
fingers and calllosities on one or more digits of their
dominant hand from repeated use of metal scissors.
It is possible to appreciate why osteoarthritis
developed in the distal interphalangeal joints of the
dominant hand as it was these joints, and in particu-
lar the distal interphalangeal joint of the index
finger, that were repeatedly hyperextended during
sewing procedures known as “top sewing” and
“piping”. Mechanical overload and disturbances of
blood flow would be maximal across these joints.
Simple observation in normal subjects shows
blanching of the skin across the distal interpha-
langal joints in association with such a manoeuvre.

Radin et al have proposed a hypothesis for the
aetiology of idiopathic osteoarthritis of the hands.3
It is that repeated flexion of the distal interpha-
langal joints by the flexor profundus in precision
gripping generates a force per unit area two to four-
fold higher in these joints than in the other joints
of the fingers. In these seamstresses however there was
repeated extension rather than flexion of the distal
interphalangeal joints suggesting that there is more
than one mechanism for the generation of
Heberden’s nodes.

In a large study of workers doing different jobs in
a woollen mill an association was found between
osteoarthritic changes in the hands, hand domi-
nance, and the pattern of use of the hands—that is,
excess wrist or finger use was associated with corre-
sponding degenerative disease of the wrist or fin-
gers. Osteoarthritis of the hands has also been
reported to be more prevalent in craftsmen than
clerical workers. Further evidence in support of
repeated trauma as an aetiological factor for degen-
erative hand disease is a report that hands weak-
ened by hemiplegia or peripheral nerve injury do
not generate Heberden’s nodes.5

Since making these observations discussions have
taken place with management in the factory to find
ways to remove the need for “top sewing” and
“piping” and to find an ergonomically improved
alternative to dressmakers’ scissors.

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films and Professor P A Bacon for his comments.

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3 Radin EL, Parker HG, Paul IL. Pattern of degenerative arthritis.
4 Hadler NM, Gillings DB, Imbus HR, Levitin PM, Makuc D,
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5 Stecher RM, Karnosh LJ. Heberden’s nodes; effect of nerve
injury upon formation of degenerative joint disease of fin-

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