Medical History

Physical deformity of Richard III

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My interest in Richard III, as that of many others, arose from reading Shakespeare's three parts of *King Henry VI* and *King Richard III*. I intend to follow Shakespeare in building up an image of what might have been the medical diagnosis in Richard's case, then compare that with the facts about the man as they seem to be known, and so develop a hypothesis to describe what may have happened to him at birth or in utero, which may have affected his later appearance. This method leads to a new concept about him and his possible physique.

Shakespeare's Richard

There are several pertinent quotations in the plays. Margaret of Anjou taunts Richard's father with the words

And where's that valiant crook-back prodigy,
Dicky your boy . . .

Richard himself says

Why, love forswore me in my mother's womb:
And, for I should not deal in her soft laws,
She did corrupt frail nature with some bribe
To shrink mine arm up like a wither'd shrub;
To make an envious mountain on my back,
Where sits deformity to mock my body;
To shape my legs of an unequal size,
To disproportion me in every part . . .

Just before he is put to death King Henry VI tells Richard

Thy mother felt more than a mother's pain,
Teeth hadst thou in thy head, when thou wast born,

Later, Richard declares

For I have often heard my mother say,
I came into the world with my legs forward:

And later still he says

This shoulder was ordain'd so thick, to heave;

At the opening of *Richard III*, he says

I, that am curtail'd of this fair proportion,
Cheated of feature by dissembling nature,
Deform'd, unfinish'd, sent before my time
Into this breathing world scarce half made up,

Another passage reads

Look how I am bewitch'd; behold mine arm
Is, like a blasted sapling, wither'd up:

Richard's mother says

A grievous burden was thy birth to me;

There are other references to Richard having the appearance of a toad and to how his hair grew well down the nape of his neck, and that he had teeth at birth.

Shakespeare was determined to paint Richard as a villain, even to the point of melodrama. There is dramatic merit in making villains instantly recognisable and despicable by their leers and sneers, distorted mouthings, and their clothing and accoutrements. Victorian melodramas and present cowboy films continue the convention. In a less queasy Elizabethan age physical deformity must have been a godsend to a playwright. Shakespeare seized upon it. There was the added bonus that such depiction would happily contrast the gory Plantagenets with the beneficent Tudors, especially Queen Elizabeth, before whom the play might be performed. The audience could hoot

FIG 1—Richard III. Reproduced by kind permission of the National Portrait Gallery.

FIG 2—Richard III as portrayed by Edmund Kean. Reproduced by kind permission of the Shakespeare Birthplace Trust.

and cry out at wickedness personified, and at the same time pride themselves on how much better things had become. Such a happy concatenation of circumstance was not to be resisted and was likely to be a success, both dramatically and financially.

Possible diagnoses

Whatever the truth about Richard, Shakespeare suggests a premature breech delivery and a painful labour. At birth the child had a tooth or teeth, and perhaps the posterior hairline was low, while the appearance of a toad suggests a short neck and prominent eyes. Later the child grew up to have a withered arm, a hunchback, raised shoulder, and legs of unequal length. This description seems to portray two separate possibilities, one a kyphoscoliosis and the other a nerve injury affecting the arm.

KYPHOSCOLIOSIS

Kyphoscoliosis may well give the appearance of unequal leg length and a raised shoulder as well as the back deformity. But from portraits and other evidence it now seems certain that Richard did not have a hunchback. There is no contemporary description that refers to any such abnormality. For present purposes this idea will be abandoned, but it still leaves the possibility of a nerve lesion.

KLUMPKE'S PARALYSIS

In breech delivery there are two possible main injuries of the brachial plexus—Klumpke's paralysis affecting essentially C 8 and T 1, and Erb's paralysis affecting essentially C 5 and C 6. There may, of course, be any form of mixture of these two, up to total avulsion of the brachial plexus from the spinal cord. By the nature of the segmental nerve supply of the muscles the clinical effects of Klumpke's paralysis will fall mainly on the hand and part of the forearm, while those of Erb's paralysis affect mainly the shoulder girdle and arm muscles. There is a portrait of Richard III in the National Portrait Gallery in London in

which both hands are shown, and apart from looking pudgy, there is no abnormality. Of course, the artist may for good reasons not have wished to show his king with any blemish, but given that the evidence is what is is, this painting would not support a diagnosis of Klumpke's paralysis.

Another portrait is in the Royal Collection at Windsor and is essentially similar, though missing out part of the left hand; so from these two pictures one can only see the front of the neck, the face, and the hands, for the rest is covered by clothing, a hat, or long hair, and the lower half of the body is not painted. There is no apparent abnormality of the face or neck and the eyes do not appear prominent. There seems, however, to be no doubt about some slight but appreciable elevation of the right shoulder, and this is seen in both portraits. The portrait at Windsor is by an unknown visiting Flemish artist, and the National Portrait Gallery portrait a copy, probably by the same painter, but both were painted after Richard's death.

Gairdner¹ lists the births of all 12 children of the Duchess of York, who was Richard's mother, and he was the 11th. That author says "we have distinct testimony to the fact that in after life he was a small man of feeble bodily powers . . ." There is some evidence too that he was born feet first, he already had teeth at his birth, and his hair came down to his shoulders. Sir Thomas More, quoted by Clive (1973),² who was 8 at the time of the death of Richard, records that he was born by the breech and "that the Duchess his mother had so much ado in her travail that she could not be delivered of him uncut." This suggests an episiotomy, but this operation is usually ascribed to the eighteenth century, though that does not deny the possibility of it being done occasionally and earlier. More also records the observation that Richard in later life was small.

ERB'S PALSY

An 11th baby, on statistical grounds derived from a later age, might have been large, and so might have caused a prolonged labour and difficulty with delivery of the shoulders and head. This might have been overcome by forcible traction, which could have caused an Erb's palsy. If severe enough this might have been responsible for failure in development of the shoulder

FIG 3—Richard III as portrayed by Ian Holm. Supplied by Holte Photographics.

girdle, upper arm muscles, and scapula, so that with growth the right shoulder would not descend as far as the left. It is not possible to be sure if labour was premature, as Shakespeare suggested. Even if it were, a small baby can still sustain trauma to its brachial plexus.

The hypothesis of an Erb's palsy appears attractive, and there is evidence³ that Richard worked hard in his youth to become strong and able to wield a sword and other martial implements in support of his brother, Edward IV, in the Wars of the Roses. This may not have been due to any special weakness in the right arm, however, but to a general, relatively poor physique, which he might have thought needed strengthening. He seems to have been a redoubtable fighter, and Kendall³ says that "Richard was in the thick of the conflict, swinging a heavy battle-axe." This was at the battle of Barnet. It does not suggest any weakness in either arm. Kendall's suggestion, however, that the excessive exercise in youth was the probable cause of the raised right shoulder does not seem to be very likely. The idea seems to have arisen with a Miss Halsted, quoted by Markham (1906).⁴

SPRENGEL'S DEFORMITY

Every tailor knows of the almost invariable inequality of the height of the shoulders, so that Richard's deformity may have been nothing other than an exaggeration of the normal. On the other hand, he may have had a Sprengel's deformity. In this there is underdevelopment of the scapula, which may be attached to the vertebral column by bone or fibrous tissue, and the muscles attached to the scapula are hypoplastic.⁵ This might exactly explain the appearance of Richard III as we know it.

Sprengel's deformity is sometimes hereditary but not always, and it is found in all degrees of severity. The main disability is in raising the arm above the head, since the scapula is more or less restricted in mobility. The condition may occur in isolation but may be associated with various other bony deformities, such as hemivertebra or the very short neck of the Klippel-Feil deformity.

Probably Richard III had no great bodily abnormality. He was slight of build, for which he tried to make up by vigorous exercises, especially fighting, and he had a raised right shoulder, but probably nothing else of interest or importance. The cause of this might possibly have been due to his early exercises or an Erb's palsy. Neither of these seems very likely, so that better hypotheses may be that he showed a normal though unusual raised shoulder, or that he had a minor degree of Sprengel's deformity.

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Fasting girls and our attitudes to them

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Fasting girls have always been the object of curiosity, and people in contact with them have reacted with degrees of understanding that reflect the contemporary level of knowledge of matters such as nutrition and bodily metabolism. Today we recognise that food intake may be affected by a wide variety of morbid psychological forces—for example, mood disorders, such as depression and phobic anxiety states; psychotic conditions including self-neglect or specific fears of food contamination; the abdominal hypochondriacal syndromes; psychogenic vomiting; and the syndrome of anorexia nervosa. Although we may acknowledge the importance of such psychological factors, however, we still find it hard to achieve an objective attitude to the management of the "fasting girl" and tend instead to mistrust and perhaps even reject her. This review aims to increase our understanding of these difficulties by placing them in a historical perspective.

Fasting girls of the past

Not surprisingly, perhaps, the earliest descriptions of girls who could apparently exist for long periods without food or drink seem to have offered one of two explanations—namely, that the girls were either influenced by the supernatural and miraculous or were cheats.

JANE BALAN

Jane Balan, the "French Fasting Girl of Confolens," who was said to have lived without receiving meat or drink for at least three years, was described by Pedro Mexio in 1613¹ in one of the earliest recorded examples of a fasting girl. Some people thought that her condition was due to the "wicked power" in an apple given to her by an old woman some months previously, but Mexio dismissed this view and saw the case as a "drying up of the liver and of all the parts serving to nourishment due to hurtful humours." In her eleventh year, after an episode of fever and vomiting which began on 15 February 1599, she became speechless, weak, fearful, and for a short period "void of good sense." No one could persuade her to eat: "for both meats and drinks she altogether loaths, and mightily abhorreth." She developed extreme wasting of the abdomen, though there was no breast atrophy: "her pappes prettie and round." Her hair remained unchanged, and her limbs were

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