Reviewer's report

Title: Federico di Montefeltro's hyperkyphosis: a visual-historical case report

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Reviewer: Brian Hurwitz

I am familiar with the literature and believe that this case meets one of the 7 criteria for evaluation in the journal: Unexpected or unusual presentations of a disease

Has the case been reported coherently?: No

Is the case report authentic?: Yes

Is this case worth reporting?: No

Is the case report persuasive?: No

Does the case report have explanatory value?: No

Does the case report have diagnostic value?: No

Will the case report make a difference to clinical practice?: No

Comments to authors:

General
This is an interesting paper which has a threefold aim:

1. to report that the C15th Duke of Urbino, Frederigo Da Montefeltro, had a visibly obvious thoracic hyperkyphosis revealed in two famous depictions of him by Piero della Francesca
2. to develop differential diagnoses for this condition, and
3. to suggest the etiology of the anomaly identified.

The paper takes the form of a evidence based report which draws on the observations of the authors and on a formal search for papers (with some atypical features) that address these questions. How well does it succeed in these aims?

1. The evidence that this renowned C15th fighter suffered from a thoracic hyperkyphosis which the authors assert is the prominent acute bend seen in the Uffizi portrait in the mid-thoracic area, but this is much less discernible in the Brera portrait of the Duke adoring the Madonna. The authors produce no other circumstantial evidence that suggests that the Duke had this spinal deformity –
eg they have found (have they looked for it?) no contemporary documentary
evidence concerning his appearance, or health, that his fitness or ability to fight
was impaired by backpain or difficulty maneuvering. The purported deformity of
the Duke's is much less apparent in the Brera depiction, which the authors argue
is because he is wearing a full armour, which hides the hyperkyphosis. However,
any such deformity is not suggested in depiction of the Duke on the rear of the
Uffizi portrait, where the he is seen seated on a chair on a triumphal chariot
pulled by 2 white chargers (see A4 colour frontispiece plate in Kenneth Clark’s
Piero Della Francesca, London, Phaidon Press Ltd 1951). It is also not visible in
Pegro Berruguete’s ¾ side-on (from the front) portrait of the Duke (where again
he is in armour) which is in the Palazzo Barberini in Rome (Clark figure 61)
although there is a suggestion of an acute bend in the upper thoracic spine in the
portrait of the Duke on the Sperandio Medal (Clark figure 59). In none of these
depictions is there any hint of an associated stoop – in all the pictures mentioned
the Duke has an upright and straight military bearing.

The authors state that ‘other portraits of the Duke by different artists in which he
is depicted in perfect lateral view also reveal the hyperkyphosis’ but supply no
references.

On the straightforward visual level I am quite unconvinced. One cannot assume
an identity between what is seen in a painting – which is the result of the artifice
of a representation – and what exists within the clothing and flesh of the person
represented. However, the authors treat the Uffizi portrait as definitive X-Ray-like
evidence, which on its own it clearly is not. Whilst the acuteness of the bend in
that portrait is quite plain to see, it is visually enhanced by the angle at which the
landscape in the background (river and river banks) intersect with the posterior
chest of the Duke. It is quite inappropriate for the authors to dismiss the
possibility that this appearance is not a manifestation of Piero’s style, (ie the
degree to which Piero presents bodily forms in a manner that emphasises such a
bend in this position in his figures) by pointing to the fact that it cannot be seen in
the portrait of his wife Battista Sforza. It can most clearly be seen in the following
works by Piero:

• One of the right hand female, adoring figures kneeling (in full side on portrait)
within the robes of the Madonna Della Misericordia in San Sepulcro (Clarck plate
1)

• Adam and Eve (both in full side on portrait) in The Death of Adam in Arezzo
(Clark plates 31 and 32) – here the Adam’s thoracic bend is comparable to that in
the Uffizi Duke’s depiction. Even though Adam is seated naked, announcing his
death, his head is upright, unlike Eve’s which is drooping, probably in sadness,
but possibly also because of a stooped, kyphotic posture of old age

• One of the upper thoracic bends in two young women (both in full side on
portrait) within in the retinue of the Queen of Sheba, in the Queen of Sheba’s
Visit to Solomon in Arezzo (Clark plates 39+40) shows as acute an angle as that
seen in the Uffizi portrait

• One of the mail courtiers (3/4 portrait from the front) to the left of Solomon also
shows the thoracic bend (Clark plate 47and49)
The Discovery and Proof of The Cross Arezzo (Clark 65, 67,69) shows a young man with a spade (3/4 portrait from the front) with a possible thoracic bend. Although Piero is famous for the accuracy of his depictions – see the warts and hair on the Uffizi portrait as well as for his interest in the exactitude of his representations (he wrote a famous treatise on perspective) - it is inconceivable that all these figures, even if drawn from life, could have suffered from thoracic hyperkyphosis. Only Eve is stooped – and that is most likely a sign of her sadness. A much more likely explanation is that provided by the authors themselves, but too peremptorily dismissed by them: this is a stylistic feature of Piero’s monumental human forms and on its own it cannot be taken to signify anatomical anomaly.

2) The authors’ first differential diagnosis is correct and moreover explains why this deformity has apparently not been previously noticed.

3) This section is irrelevant as the case is not one of anatomical anomaly requiring explanation.

Comment
EH Gombrich once asked why all Rubens’ putti, even the portrait of his own infant son, appeared facially to be infected by mumps? The answer, he argued, was not that Rubens had painted portraits of children with inflamed and swollen salivary glands, but rather that Rubens had been influenced by a particular aesthetic which highlighted and emphasised the bloated rosy cheeks of young children (see Art and Illusion chapter 5).

The authors of this case report should have gone a little further afield than the portrait of the Duke of Urbino’s wife to ascertain whether the visual appearance they identify in the Uffizi portrait is seen elsewhere in the artist’s work. A simple survey of some of Piero della Francesca’s major works reveals that he painted many figures in profile with acute bends in their mid-to-upper thoracic spine. Such figures are arresting and intriguing in their posture and draw the eye of the onlooker to focus on them within such works. They are not a sign that Piero was observing and recording (unconsciously or not) hyperkyphosis of the thoracic spine.

Revisions necessary for publication
I think the only way that this paper could conceivably be rescued is by using it as an example of the dangers and pitfalls of naive literalist readings of works of art and retrospective diagnosis.

What next?: Reject

Quality of written English: Acceptable