

MEDICAL DIAGNOSIS AND HENRY IV OF CASTILE

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In 1462 Henry IV's wife gave birth to a daughter, Juana. Was Henry IV her father? The king's enemies were subsequently to allege that he was impotent and that Juana was the fruit of an adulterous relationship between the queen and Beltrán de la Cueva. Eventually such allegations helped to support the claims of Isabella to the throne of Castile at Henry IV's death in 1474. But although the succession was resolved by force of arms, historians have occasionally been preoccupied with the problem of whether Isabella usurped the throne from Juana. Attempts to resolve this problem inevitably lead back to the enigmatic figure of Henry IV. Was he in fact Juana's father? Was he impotent, as his enemies alleged? Can the evidence which has survived be used to formulate a medical diagnosis which might help to resolve the mysteries both with regard to Henry IV himself and the related problem of the 'legality' of the succession?

Until recent years Gregorio Marañón's famous book, *Ensayo biológico sobre Enrique IV de Castilla y su tiempo*, which has frequently been reprinted since it was first published in 1930, remained virtually unchallenged (1). Yet since 1930 several developments have occurred

(1) All references are to the eighth edition: GREGORIO MARAÑÓN, *Ensayo biológico sobre Enrique IV de Castilla y su tiempo* (Madrid, 1956).

which provide grounds for a reassessment of Marañón's views. Firstly, it is clear that endocrinology, as a medical science, has advanced significantly since Marañón, working in relative isolation, dedicated his energies and talents to this speciality. Secondly, as is well known, the mortal remains of Henry IV were discovered in 1946, and although Marañón himself examined this new evidence, further testing of his diagnosis in the light of these remains seems called for. Thirdly, historians have accumulated new items of documentary information and subjected existing sources to a more rigorous analysis. Finally, Marañón's diagnosis was openly questioned by Daniel Eisenberg in an article in the *Renaissance Quarterly* in 1976 (2).

Not all these issues and developments can be reviewed in this short paper. In what follows, therefore, no account will be taken of the historical work mentioned above (3), and the broader issues of Henry IV's alleged impotency and homosexuality, as well as the problems relating to Juana's legitimacy, will be ignored. These are, of course, important matters, but here attention will be restricted to those parts of Marañón's thesis which concern eunuchoidism and acromegaly.

When Marañón published his study of Henry IV the medical speciality known as endocrinology was still tenuously established in Spain. The reasons for this have been examined by Glick, and it is clear that the institutionalisation of endocrinology was virtually the work of Marañón alone (4). Concentrating on the role of the internal secretions, Marañón believed that the glands determined the morphology, sexual life, and psychology of human beings. Other eminent physiologists of the period, however, did not share Marañón's clinical and organotherapeutic orientations, and although he institutionalised endocrinology when he reorganised the Institute of Medical Pathology in Madrid in 1925, Marañón was acutely aware that his discipline still lacked academic and social legitimisation. The transplant operations which he and León Car-

(2) DANIEL EISENBERG, 'Enrique IV and Gregorio Marañón', *Renaissance Quarterly*, XXIX (1976), pp. 21-9.

(3) Most of this work relates to the nature of the chronicle evidence or the question of Juana's legitimacy. On this latter aspect see, for example, the important discussion in Tarsicio de Azcona, *Isabel la Católica. Estudio crítico de su vida y su reinado* (Madrid, 1964), pp. 40-4.

(4) For this, and what follows, see THOMAS F. GLICK, 'On the Diffusion of a New Speciality: Marañón and the «Crisis» of Endocrinology in Spain', *Journal of the History of Biology*, 9 (1976), pp. 287-300.

denal, a professor of surgery, carried out in 1926 attracted a great deal of publicity. Yet his views on the glandular determinism of human behaviour were perhaps most effectively popularised in his medical biographies of famous individuals. The *Ensayo biológico sobre Enrique IV* is a case in point. In considering this particular work, therefore, the author's belief in glandular determinism should be kept in mind, and it should also be remembered that, just as the 1926 transplant operations were carried out without the benefit of subsequent discoveries about donor-recipient rejection, so some of Marañón's endocrinological propositions might be open to question in the light of subsequent research.

What, then, was Marañón's diagnosis with respect to Henry IV? After reviewing the evidence and dwelling particularly on Diego Enríquez del Castillo's physical description of the king, Marañón concluded: 'La lectura de esta descripción nos permite hacer al punto el diagnóstico morfológico de Don Enrique. Se trataba, sin duda, de un displásico eunucoide con reacción acromegálica, según la nomenclatura actual' (5). Both these conditions, of course, are due to endocrine disturbances – an insufficient production of male sexual hormone in the case of eunuchoidism, and a disturbance of the pituitary gland with a resulting overproduction of growth hormone in the case of acromegaly. Both these illnesses produce specific conditions, but since Marañón viewed matters in terms of a wideranging glandular determinism, it comes as no surprise to find that he believed that not only did his diagnosis explain the king's sexual problems and a wide range of psychological traits, such as schizophrenia and exhibitionism, but also his everyday preferences, such as his taste for music:

Queda, pues, fuera de duda, a mi entender, que nuestro Monarca era un displásico eunucoide con reacción acromegálica, y ello, como antes hemos dicho, nos explica todas las modalidades de su carácter y de su vida sexual, que tanto influyeron en los destinos de España. Nos explica su tendencia al aislamiento y a la soledad, características de la mentalidad esquizoide, tan frecuente en los hipogenitales, como antes hemos dicho; la flaqueza de su voluntad y la facilidad con que se entregaba al mando ajeno, rasgo también íntimamente ligado al instinto vacilante del sexo, como repetidamente hemos de-

(5) MARAÑÓN, *op. cit.*, p. 79.

mostrado. Y hasta la misma aptitud y afición para la música —para no revisar más detalles de su carácter— que citan sus comentaristas, es también un rasgo muy frecuente en la psicología de anormales (6).

What are we to make of a diagnosis which attributes to Henry IV a combination of two rare illnesses? In fact Eisenberg has effectively demolished part of what he calls 'this amazingly precise diagnosis':

Unfortunately for Marañón's diagnosis, no source denies that Enrique had an abundant beard: 'la barba luenga e pocas veces afeytada', says Enríquez del Castillo; 'la barba, larga y saliente', states his enemy Palencia. And with this the whole theory of eunuchoidism comes tumbling down, because loss of facial hair is one of the first and most definite symptoms of androgen insufficiency, and vice-versa; the beard has for this reason always been associated with masculinity (7).

But, in addition, Eisenberg has called attention to a significant footnote where Marañón admits that his diagnosis of Henry IV is not that of a 'eunucoide' as such but of a person subject to a '*displasia eunucoide*' — that is, his diagnosis refers to a bodily configuration, or collection of symptoms, rather than to a '*modalidad ... francamente patológica*' (8).

What made Marañón hesitate at this point in his argument? The most dubious feature of his diagnosis is the particular way in which he combined eunuchoidism with acromegaly. In cases of acromegaly a tumour of the hypophysis frequently results in a loss of sexual potency —in other words the condition of the pituitary gland may determine eventual eunuchoidism. But Marañón argued that Henry IV displayed his sexual timidity, weakness, and relative impotence from the early age of twelve, and that he was 'un displásico eunucoide con reacción acromegálica' that is, acromegaly was the effect rather than the cause. He explained this by stating that 'En tales casos la hipófisis reacciona a la falta o disminución grave de la secreción sexual, combinándose, como hemos dicho, los síntomas del eunuchoidismo con los de la acromegalia' (9). By

(6) *Ibid.*, pp. 91-2.

(7) EISENBERG, *art. cit.*, p. 25.

(8) *Ibid.*, pp. 24-5; MARAÑÓN, *op. cit.*, p. 80, n. 2.

(9) *Ibid.*, p. 80.

arguing in favour of this sequence of events Marañón seriously weakened his case, because if the young Prince Henry had hypogonadism, acromegaly could not have been a reaction. In other words it would be perfectly plausible for and acromegalic to develop impotence, but the young and eunuchoidal prince could not later have developed acromegaly as a reaction. It may have been for this reason, therefore, that Marañón inserted his cautionary footnote: 'Quiero llamar, sin embargo, la atención sobre el hecho de que no califico a Don Enrique de «eunucoide», sino de afecto de una «displasia eunucoide». Nevertheless, he still finished this particular discussion by referring to 'este auténtico e indudable eunucoide' (10).

But if eunuchoidism with an acromegalic reaction is ruled out, does the evidence substantiate a diagnosis of acromegaly? Eisenberg thinks it does: 'The group of symptoms, once pointed out, is easy to recognize ... Enrique's affliction was not Marañón's acromegalic eunuchoidism but acromegaly, the endocrine disturbance caused by oversecretion of pituitary hormones from a tumor or other irregularity of the pituitary itself (11). However, despite the fact that Eisenberg makes out a good case for his argument, caution is once again in order.

Acromegaly is a slow, progressive, and rare disease which, affecting adults, is characterised by an abnormal growth brought about by an excess of growth hormone in the pituitary gland. Hypersecretion of growth hormone by eosinophil cells may develop very rarely before the epiphyses have united and produce gigantism. Much more frequently it occurs in adult life, after union of the epiphyses, to cause acromegaly. Acromegaly is characterised by large extremities – that is, by an increase in the size of the bones and soft tissues of the hands, feet, supraorbital ridges, sinuses and the lower jaw. The skin becomes thick and coarse; the subcutaneous tissues increase in depth, while enlargement of the tongue, nose and ears might be conspicuous. The viscera, for example the heart, thyroid and liver, enlarge. As the disease progresses, the patient frequently develops arthritis, kyphosis and muscular weakness.

In the case of Henry IV the most striking evidence in favour of a

(10) *Ibid.*, p. 83. However, it may well be that it was the king's beard that prompted Marañón's caution because in a footnote to this same page he attempted to explain this problem away.

(11) EISENBERG, *art. cit.*, pág. 26.

diagnosis of acromegaly is provided by Enríquez del Castillo's famous description of the king:

Era persona de larga estatura y espeso en el cuerpo, y de fuertes miembros; tenia las manos grandes y los dedos largos y recios; el aspecto feroz, casi á semejanza de leon, cuyo acatamiento ponía temor á los que miraba; las narices romas é muy llanas, no que así naciese, mas porque en su niñez rescibió lision en ellas; los ojos garzos é algo esparcidos, encarnizados los párpados: donde ponía la vista, mucho le duraba el mirar; la cabeza grande y redonda; la frente ancha; las cejas altas; las sienes sumidas, las quizadas luengas y tendidas á la parte de ayuso; los dientes espesos y traspellados; los cabellos rubios; la barba luenga é pocas veces afeytada; el tez de la cara entre rojo y moreno; las carnes muy blancas; las piernas muy lueñas y bien entalladas; los pies delicados (12).

At first sight this description appears to confirm the diagnosis – the king was tall, he had a large jaw, his head was large and round, and his big hands were equipped with long and robust fingers. Moreover, if Henry IV did suffer from acromegaly, even Münzer's much later and infamous description of his penis might be of relevance ('Su miembro era delgado en la raíz y grueso en la extremidad, por lo que no podía entrar en erección') (13).

Nevertheless these factors do not in themselves constitute a proof of acromegaly. Although the king was tall, he was shorter in stature than his father (14). Moreover the majority of people who have large hands and large jaws are not acromegalic. Indeed Marañón himself footnoted alternative arguments relating to the royal prognathism (15), and presumably it would not be unreasonable to argue that the so-called later 'Hapsburg jaw' of the Spanish monarchs was a Castilian inheritance,

(12) Diego Enríquez del Castillo, *Crónica del rey don Enrique el Cuarto* (Biblioteca de Autores Españoles, LXX. Madrid, 1878), pp. 100-101.

(13) See MARAÑÓN, *op. cit.*, p. 85. On this matter, however, there is no good reason to accept Münzer's evidence in preference to the descriptions given by the Segovian prostitutes: see *Memorias de Don Enrique IV de Castilla* (Real Academia de la Historia. Madrid, 1835-1913), II, pp. 64-5.

(14) EISENBERG, *art. cit.*, p. 27; MARAÑÓN, *op. cit.*, p. 81.

(15) *Ibid.*, p. 81, n. 3.

the Hapsburg contribution being the bulbous under-lip. Even more striking, however, is Castillo's reference to the king's 'pies delicados' because this rules out the marked localised increase in the feet which is usually a symptom of acromegaly (16).

All these doubts are reinforced by the disappointing and cursory examination of Henry IV's remains. As has been noted, these were found well after Marañón's book had been published, and there is little doubt that the photographs and description of the royal mummy confirm Castillo's description (17). In effect the height of the mummy was 1.70 metres and, allowing for 'shrinkage' and missing cervical vertebrae, Marañón calculated Henry IV's height, when alive, at 1.80 metres. The upper part of the large chest measured 50 centimetres, and the width of the hips was approximately the same as that of the chest. The robustness and size of the head and jaw emerge very well in the photographs. But do the description and photographs of the remains support the diagnosis of acromegaly? Marañón himself refrained from claiming this in his report on the remains, and his comments on the royal corpse are at times surprisingly vague. Measurements are carefully given of items of apparel found alongside the body, yet the only measurements given of the mummy itself are those of its height and the upper half of the chest. The legs, for example, are merely described as being 'notoriamente largas' (18), and no measurements are given for the skull, even though this was eminently feasible once it had been removed from the crypt and placed on the altar where it was photographed. The description of the jaw is also very disappointing. The photographs certainly reveal the king's prognathism, and one in particular gives an impression of the relative position of the teeth of the lower jaw to the upper teeth. Yet there is no detailed description of this vital evidence relating to the alignment of the teeth (20).

(16) Marañón obviously found some difficulty in trying to explain away this incompatibility: *Ibid.*, p. 82.

(17) For the report and photographs, and for what follows, see M. GÓMEZ MORENO and G. MARAÑÓN, 'Los restos de Enrique IV de Castilla', *Boletín de la Real Academia de la Historia*, CXXI (1947), pp. 41-50.

(18) In terms of a diagnosis of eunuchoidism this statement was particularly vague (especially given the angle at which the corresponding photograph was taken).

(19) The problem here is that the lower teeth of many individuals, who are *not* acromegalic, encircle or cover the upper teeth.

(20) *Not only* was the skull well-preserved but the report states that 'los huesos de la nariz aparecen intactos': Moreno and Marañón, *art. cit.*, p. 47.

There is another point of importance. The use of X-rays might be of vital importance in establishing whether Henry IV did in fact suffer from acromegaly. It is possible that, although X-ray techniques were well developed in the 1940s, the conditions at the site where the remains were examined did not facilitate their use. It is to be hoped, however, that such an examination may at some time be authorised. X-rays of the skull might well reveal the size of the pituitary fossa and the condition of the frontal sinuses (20). Similarly, although Marañón's extremely vague descriptions of the hands and feet suggest a degree of deterioration, X-rays of these parts of the remains might well establish whether 'tufting' characterises the extremities of the fingers and toes (21).

The conclusion, therefore, is that eunochoidism followed by acromegaly is ruled out, and that acromegaly, followed by a loss of potency, still remains to be satisfactorily demonstrated. Such a conclusion, of course, leaves many of the wider issues unresolved, but a careful assessment of the various other factors involved may remove confusions and limit the number of possibilities. If, in particular, the differing characteristics of impotency, infertility, and homosexuality are kept carefully in mind, it is possible that a re-examination of the evidence might yet yield significant results.

(21) The description of the hands and feet is very cursory: 'Ningún detalle puede anotarse respecto de los brazos, cruzados para el descanso eterno sobre la parte baja del pecho, ni respecto de las manos, con dedos que parecen recios y largos, en cuanto deja ver la destrucción del tiempo, así como en los pies. Lo que queda de éstos muestra una inclinación exagerada hacia afuera, en la posición llamada pie valgo'. *Ibid.*, p. 46.

DIAGNOSTICO MEDICO DE ENRIQUE IV DE CASTILLA *

En 1462, Enrique IV tuvo una hija, Juana. ¿Fue Enrique su verdadero padre? Los enemigos del rey coinciden en que éste era impotente, siendo Juana fruto de las relaciones entre la reina y Beltrán de la Cueva si bien tal argumento sirvió de base para alegar el derecho de Isabel al trono de Castilla una vez fallecido Enrique IV en 1474.

Aparte del citado problema que, como es sabido se resolvió por las armas, hay que volver a la figura del monarca. ¿Era realmente impotente como afirman sus enemigos? ¿De qué forma las pruebas que poseemos pueden servir para formular un diagnóstico médico que ayude a resolver el problema y con él la «legitimidad de la sucesión»?

Hasta hace poco el libro de D. Gregorio Marañón «*Ensayo biológico sobre Enrique IV de Castilla y su tiempo*» permaneció prácticamente inalterable. No obstante, desde 1930 han aparecido nuevas teorías que hacen replantearse dicho punto de vista.

En primer lugar, hay que tener en cuenta los avances de la endocrinología desde que Marañón le dedicó sus estudios. En segundo lugar, los restos mortales de Enrique IV fueron descubiertos en 1946, y aun-

* Resumen realizado por Mari Carmen Jiménez Ferrero.

que Marañón los estudió, posteriores investigaciones apuntan hacia nuevos puntos de vista. En tercer lugar, los historiadores han acumulado documentación nueva, exigiendo la misma un análisis más riguroso. Finalmente, el diagnóstico de Marañón fue puesto en tela de juicio por Daniel Eisenberg, en el artículo «*Renaissance Quarterly*», en 1976.

En las siguientes líneas centraremos la atención en aquellos puntos de la tesis de Marañón que se refieren al eunucoidismo y acromegalia.

Hay que tener en cuenta que cuando Marañón estudió la endocrinología era prácticamente el único que la trabajaba en España. Haciendo hincapié en el papel de las secreciones internas, Marañón creyó que las glándulas determinaban la morfología, la vida sexual y la psicología de los seres humanos. Sin embargo, contemporáneos suyos no comparían este punto de vista.

En el «Ensayo biológico sobre Enrique IV» se refleja la creencia del autor en un determinismo glandular e incluso que en 1926 eran realizadas operaciones de trasplante sin contar con los descubrimientos subsecuentes acerca del rechazo. Por eso, algunas tesis de Marañón deben orientarse hacia cuestiones que contribuyan a esclarecer posteriores investigaciones.

¿Cuál fue el diagnóstico de Marañón respecto a Enrique IV? Después de revisar la descripción física que del rey hace Diego Enríquez del Castillo, Marañón concluye: «La lectura de esta descripción nos permite hacer al punto el diagnóstico morfológico de don Enrique. Se trataba, sin duda, de un displásico eunucoide con reacción acromegálica, según la nomenclatura actual». Ambas condiciones, son debidas a disturbios endocrinos, insuficiente producción de hormonas masculinas, en el caso del eunucoidismo y una alteración de la glándula pituitaria, con gran producción de la hormona del crecimiento, en el caso de la acromegalia. A pesar de todo, Marañón creyó que no sólo lo arriba señalado explicaba las alteraciones sexuales del rey, sino también temas relacionados con la esquizofrenia y el exhibicionismo, por ejemplo su gusto por la música.

De todas formas, y a pesar del diagnóstico de Marañón, ninguna fuente niega que el rey poseía una abundante barba, con lo cual la teoría del eunucoidismo se derrumba, ya que la pérdida del pelo facial es uno de los principales síntomas de insuficiencia andrógena y la barba siempre ha sido asociada a la virilidad.

Según Eisenberg, Marañón no hablaba de un eunucoidismo sino de una displasia eunucoide, lo cual alude a una configuración corporal o

colección de síntomas más que a una «modalidad francamente patológica».

¿Qué fue lo que hizo dudar a Marañón en este punto de su tesis? La cuestión más dudosa es la manera en que él combinó eunucoidismo con acromegalia. En casos de acromegalia, es frecuente la existencia de un tumor en la hipófisis, resultado de una pérdida de potencia sexual. Pero Marañón argumentó que Enrique IV se desahogaba sexualmente desde los doce años y que era «un displásico eunucoide con reacción acromegálica», es decir la acromegalia era efecto más que causa. No obstante, si el joven príncipe Enrique sufría hipogonadismo, la acromegalia no pudo haber sido una reacción, es decir, sería factible que un acromegálico fuera impotente pero el príncipe eunucoide no pudo desarrollar la acromegalia como reacción. Según Eiseberg, la aflicción de Enrique IV era acromegalia, disturbio endocrino causado por una supersecreción de las hormonas de la pituitaria provenientes de un tumor o cualquier alteración de la misma pituitaria. A pesar de todo, la acromegalia es una enfermedad lenta y rara que afecta a los adultos, caracterizada por un crecimiento anormal debido a células que muy raramente, antes de que la hipófisis se una, producen gigantismo.

En cuanto a la acromegalia, se caracteriza por unas extremidades muy largas, lo que ocurre por un aumento del tamaño de los huesos y tejidos blandos de manos, pies, senos y mandíbula inferior. La piel se vuelve gruesa, los tejidos subcutáneos crecen en profundidad mientras que el ensanchamiento de la lengua, nariz y oídos puede ser conspicuo. La enfermedad progresa y el paciente sufre artritis y enfermedades musculares.

De acuerdo con la descripción de Enríquez del Castillo, a primera vista, parece confirmarse el diagnóstico: «El rey era alto, de ancha mandíbula, su cabeza era redonda y sus grandes manos estaban equipadas de largos y robustos dedos». Es más, si Enrique IV sufriera acromegalia, la descripción de Munzer acerca de su pene puede ser relevante: «su miembro era delgado en la raíz y grueso en la extremidad, por lo que no podía entrar en erección».

Sin embargo, no hay suficientes pruebas para dar un diagnóstico certero de acromegalia. Aunque el rey era alto, era más bajo que su padre; la mayoría de la gente que tiene manos anchas posee anchas mejillas y no son acromegálicos; el mismo Marañón habla de la «mejilla de los Habsburgo» como herencia castellana de los monarcas españoles.

Los restos mortales de Enrique IV se estudiaron después de la publicación del libro de Marañón, y según la momia, aparecen dudas derivadas de la descripción de Del Castillo. La altura de la momia era de 1,70 metros, lo cual, de acuerdo con la columna vertebral, nos daría una altura en vida de 1,80 metros. La parte superior del pecho medía 50 cms. Algunas otras medidas son vagas (piernas) y otras ni se dan (cráneo). Las fotografías revelan el prognatismo del rey y una, en particular, da la impresión de la relativa posición de los dientes de la mandíbula inferior.

El uso de rayos X podría ser de vital importancia para demostrar que el rey sufría de acromegalia (la investigación no ha sido autorizada hasta la fecha) pues se podría saber, de acuerdo con el cráneo el tamaño de la fosa pituitaria.

La conclusión es que un eunucoidismo seguido de acromegalia es lo más factible y que esta última, seguida de una pérdida de potencia, aún no ha sido demostrada. Si las diferentes características de impotencia, infertilidad y homosexualidad son tenidas cuidadosamente en cuenta, es posible que un nuevo examen de las pruebas pudiera dar aún resultados relevantes.