Section of Orthopædics

President O J Vaughan-Jackson VRD FRCS

Meeting October 1 1968
(Continued from May 'Proceedings' p 438)

Short Papers

Pierre Le Damany on Congenital Dysplasia of the Hip

by J W Dickson FRCS
(Ipswich and East Suffolk Hospital, Ipswich)

The clinical and radiological examination of the neonatal or infant hip is now so well known among orthopædic surgeons as to need no description. That such a statement is possible is an indication of the advance which has been made comparatively recently.

The purpose of this paper is in no way to detract from the reputation of those to whose work that advance is chiefly due, or to minimize the value of their ideas and teaching. It is to draw to the attention of English-speaking surgeons the important work of a Frenchman, whose activities far antedate their own, and who has been seriously neglected and even ignored, not least in his own country.

It is customary to refer to the lack of attention to the paper of Ortolani (1937) but, except in Hass's monograph (1951), Le Damany is hardly mentioned in recent orthopædic literature, particularly by those most concerned in this field.

Pierre Le Damany (Fig 1) was born in 1870 and, after a distinguished professional career, died in 1963. His life thus spanned not only three invasions of France and two world wars, but extended from the period of the great historic figures of French orthopædics, Kirmisson, Calot and Lannelongue, into our own time. He worked hard, long, and with true French *rigueur*; he published and corresponded widely. It is, therefore, with sadness that one has to admit that no single obituary notice has been found. Perhaps the present paper may serve as a belated tribute, from a foreign country.

To divide and categorize what was a self-consistent whole is to introduce an artificial and academic process. This admitted, his work in this field appears to fall under three main headings: (1) Anatomical – descriptive, pathological and comparative. (2) Geographic, racial and anthropometric. (3) Therapeutic. Such a division may make it easier to understand not only where he failed, but what he achieved.

His earlier work was concerned with a close study of the anatomy of the hip and of all structures involved in its function, not only in man at all ages, but in a wide variety of animals.

His animal work was experimental as well as descriptive, and this interest evidently continued throughout his life. His observations on femoral torsion and anteversion will repay attention today, as do those on the development of the

Fig 1 *Dr Pierre Le Damany (1870–1963)*

human acetabulum. He was interested in the action of muscles, an aspect of the problem which we seem to have rediscovered only comparatively recently. Some of his observations on paralytic dislocation, which he seems not to have clearly distinguished from congenital dysplasia, would not now be accepted, but whatever else may be alleged against him, it is evident from his writing that he saw the hip and the child as a whole.

He divided hip dislocations into two main groups: (1) 'Anthropologic', which his anatomic interests and the climate of opinion of his day inclined him to believe were not only uniquely human, but related to the evolutionary state of the race affected. (2) 'Teratologic', a much smaller group, associated with other congenital defects. He advanced a then completely new thesis, that the increase in brain size required a more capacious pelvis for its delivery, and that the long thighs of orthograde man caused the fœtus to be excessively folded *in utero*. It was ingenious. As Hass remarks: 'As soon as his idea took flight into the region of anthropological strata, the terra firma of facts was left behind.'

This ingenuity of theory extended to a similar skill in mechanics, whether in the construction of models designed to show the forces acting upon an unstable hip, or the design of appliances to be worn by his patients. If one is moved to smile at the caption of one of his illustrations: 'Dans cet appareil, l'exercice est nécessaire', one need only compare it with the modern Milwaukee jacket, or with the contraptions current since Andry, to realize that he is in the grand tradition.

The second division of his work is immediately applicable today, and provided data for what could be a most interesting study of the evolution of hip dysplasia in France.

This work comprised an examination of newborn infants, exactly as advocated by von Rosen (1957) and by Barlow (1962, 1966) but published by Le Damany & Saiget in 1910; a detailed study of the areas neighbouring Rennes where hip dysplasia was endemic; and a survey, through his wide circle of correspondents, of the incidence of the condition in French overseas possessions.

The first step was the development of the clinical examination of the neonatal hip by two manœuvres. The first was simply a modification of the 'telescoping' manipulation. The second described the exact placing of the examining hand and the stabilization of the pelvis, as well as the control of the great trochanter by the middle finger, while the femoral head was gently lifted in and out of the acetabulum. His own words follow (Le Damany 1912, p 393):

'L'opérateur imprime à la tête du fémur un déplacement inverse du précédent. La pulpe du médius pousse le trochanter de dehors en dedans en même temps que la cuisse est brusquement portée en abduction. Par cette manœuvre, la tête rentre dans la cavité par-dessus le bord postérieur et cette rentrée s'accompagne d'un ressaut. Parfois léger souvent fort net, ce ressaut est quelquefois suffisamment marqué pour être perçu même par l'oreille. Le double mouvement de sens inverse qui subluxe la tête puis la ramène dans le cotyle peut être renouvelé autant de fois qu'on le désire pour un contrôle soigneux. Fait avec douceur cet examen ne doit provoquer aucune douleur; il est même indispensable qu'il soit indolore, car l'état de résolution musculaire de l'enfant est nécessaire pour laisser aux sensations leur netteté. La simple précaution d'occuper l'enfant en lui donnant à boire pendant ces manipulations suffit pour supprimer les cris et les contractions musculaires gênantes.'

This seems so exactly the manœuvre described by Barlow (1966) that a case may be made out for renaming it, in Britain at least, either the 'Le Damany test' or possibly the 'Le Damany-Barlow test'.

Using these manipulations, Le Damany next proceeded to examine the hips of 220 newborn children in the Maternité de Rennes within twenty-four hours of birth, and to enlist the help of Dr Saiget of the Maternité de Paris in examining 1,502 in that city. Of these, 740 were examined within a day of birth, and 762 ten days after birth. We have, therefore, fifty years before the moderns, a well-conceived and well-executed pilot study of 1,722 children.

He clearly distinguished the two types of unstable hip – that which became stable in days, weeks or at most months, and that which remained unstable proceeding sometimes to complete dislocation.

Of the 1,502 hips examined in Paris, 16 dislocatable hips were found in 12 children. Three became stable but, unfortunately, 13 could not be followed up. Of the 220 examined in Rennes, 9 hips were capable of being dislocated. This capacity for spontaneous cure was ascribed to the reaction of the two factors of femoral anteversion and acetabular obliquity.

He then proceeded to design a simple appliance for holding the hip in flexion and abduction by a band of fabric passed around the thigh and fastened to the bodice covering the trunk. He saw little point in splinting every unstable hip and, because of the difficulty of maintaining reduction in small infants, preferred to start treatment between the ages of 6 and 18 months. We might have wished to start earlier.

In a justifiable revulsion from the 'réduction sanglante', he advocated for the older child the classic methods of traction, plaster immobilization and provision of a specially designed appliance. His attention to detail was meticulous, but today one might object to the vigour of some

of the manipulations illustrated. Nevertheless, no one who has seen the problem of hip dysplasia in Brittany even today can fail to be impressed by his efforts to minimize the effects of what remains nothing less than a public scourge.

Le Damany's early work was summarized in 1908, in a paper giving all references up to that time. The whole subject was presented in three monographs, published in 1912, 1923 and 1950.

Judged by the standards of his own day, as should always be attempted, his claim of 97% 'anatomical cures' is excessive. When twenty- and thirty-year follow-up studies are available now, these claims must be quite unacceptable.

We should do well to remember several things, however. This work was conceived and performed within a dozen years or so of Röntgen's discovery of X-rays. Secondly, events in France after August 1914 were not conducive to academic studies, any more than they were after 1940. Despite this, much was accomplished.

Pierre Le Damany combined an original and scientific approach to surgery with a great capacity for hard work on behalf of his patients. It is fitting that in the year of the fiftieth anniversary of the British Orthopædic Association and of the Société Française de Chirurgie Orthopédique et Traumatologique, a tribute should be paid to a great and neglected man.

Acknowledgments: It is a pleasure to thank the Ciba Foundation and l'Institut National de la Santé et de la Recherche Médicale for an Exchange Bursary to France in 1967. My warmest thanks are due to Dr Louis Le Damany, a cardiologist of Rennes, who has provided the photograph of his father, copies of his works, and much bibliographic and personal information of great value. The help of the Librarians of the Royal Society of Medicine and of the Institute of Orthopædics, University of London, is gratefully acknowledged. Particular thanks are offered to Monsieur le Professeur Marcel Fèvre and to Monsieur le Docteur Pierre Bertrand, as well as to the surgical staff of l'Hôtel-Dieu, Pont l'Abbé, Finistère.

[An extended bibliographic study is in preparation, for publication elsewhere.]

REFERENCES

Barlow T G
(1962) *J. Bone Jt Surg.* **44B**, 292
(1966) *Proc. roy. Soc. Med.* **59**, 1103
Hass J
(1951) Congenital Dislocation of the Hip. Springfield, Ill.
Le Damany P
(1908) *Z. orthop. Chir.* **21**, 129
(1912) La Luxation Congénitale de la Hanche. Paris
(1923) La Luxation Congénitale de la Hanche. Paris
(1950) La Luxation Congénitale de la Hanche. Paris
Le Damany P & Saiget J (1910) *Rev. Chir. (Paris)* **42**, 512
Ortolani M (1937) *Pediatria, Napoli* **45**, 129
Rosen S von
(1957) *Acta orthop. scand.* **26**, 136
(1962) *J. Bone Jt Surg.* **44B**, 284

The Use of the Hypospray in the Treatment of Minor Orthopædic Conditions [*Abstract*]

by G R V Hughes MRCP
(*London Hospital, London*)

Following the observation that fine jets of oil travelling at high velocity may penetrate the skin without causing pain, an instrument has been designed capable of painlessly injecting medicaments under pressure. Early trials of this instrument have found that its main uses are for multiple injections and for injections which tend to be particularly painful. For these reasons we have used the Hypospray (Fig 1) in a routine injection clinic for minor orthopædic conditions. In particular a controlled trial was performed for its use in the treatment of tennis elbow compared with standard needle injection, in both cases using hydrocortisone acetate.

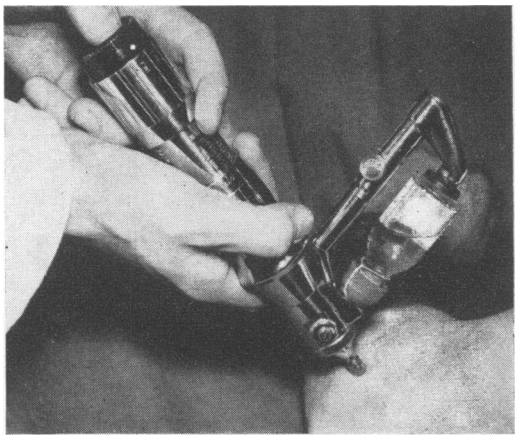

Fig 1 *Hypospray. The scale (a simple micrometer screw gauge) is calibrated both in 0·025 ml and in insulin units. (Reprinted from* Annals of the Rheumatic Diseases, *1969*, **28**, *58, by permission of the Editor*)

Cadaver studies were performed to assess the depth of penetration at various sites. In tennis elbow the success rate was identical with that of the standard needle injection. Forty-eight out of 50 patients were cured by three injections, 32 of these after the first injection. By contrast there was an impressive difference in the amount of pain produced by injection, the Hypospray being painless in almost all patients. The instrument was also found useful for injection of small joints, especially finger joints, and for a variety of 'soft tissue' conditions, particularly plantar fasciitis.

[For a full report *see* Hughes G R V & Currey H L F (1969) *Ann. rheum. Dis.* **28**, 58.]