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柳江化石人髋骨的性别判断

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摘 要

柳江化石人髋骨曾经断裂，上下二片间相互错动移位影响了坐骨大切迹有关实测数据的准确性。本文给出了校正后的数据，并应用吴新智等（1982）和孙尚辉等（1986）提供的方法，判断柳江化石人髋骨应属男性范围。柳江头骨与日本港川旧石器时代晚期男性头骨之间很小的歧异系数和柳江骶骨的男性特征也加强这一判断的可信性。

关键词 髋骨，性别判断，柳江，旧石器时代晚期

柳江化石人的标本包括头骨、部份脊柱、右髋骨大部和两段股骨。吴汝康（1959）研究认为这些化石属于同一男性个体。但人类学界也有不同看法，有人认为属于女性（Wolpoff，1980）或对其性别鉴定抱怀疑态度，提出“柳江头骨是否属于女性？”（周国兴等，1994；Brown 个人交流）。另一方面，近年，Rosenberg 在观察中国现代人骨骼后，认为东亚人头后骨骼有其独特之处，其中包括“女性化”的骨盆，有些相当宽而开扩的坐骨大切迹在欧洲人和澳洲人中会被归入女性的范围内。依据她的认识，Wolpoff 改变了对柳江化石人的性别判断（Wolpoff，1996），将其视为男性。

吴新智等（1982）和孙尚辉等（1986）分别发表过关于中国人髋骨性别判断的论文。作者现用这些研究的成果对柳江化石人髋骨的性别再次加以讨论。

柳江髋骨的耻骨上下支和坐骨下支已缺失，有些测量无法进行。髂骨基部（近髋臼部）在埋藏过程中曾经断裂，使得髋骨分为上下二片，上片向前上方移动，与下片之间产生了幅度大约 1.5 毫米的错位，在上下二片之间形成一条裂隙。然后有薄层堆积物充填于此裂隙中。这层充填物的钙化使断裂的髋骨又胶合成为一个整体。上下两片之间的这种位置错动影响了一些测量数据的准确性，使得坐骨大切迹的宽度变大了大约 1 毫米，髂后下棘至坐骨大切迹最深点的距离变短了大约 1 毫米，应当予以校正。作者按校正了的此二数据加上坐骨棘至坐骨大切迹最深点的距离给出三角形，从而计算出此三角形各角的角度、坐骨大切迹的深度和坐骨大切迹最深点到坐骨大切迹最大宽的垂直线的垂足点至髂后下棘的距离（即吴新智等 1982 年文中的 OB 长，或孙尚辉等 1986 年文中的坐骨大切迹最大宽的后段长度）。

由表 1 可见柳江髋骨的髋臼与坐骨均较小，其数据相当于现代中国人男性变异范围的低端。而柳江髋骨的坐骨大切迹指数与坐骨大切迹最大宽的后段长都很接近现代中国人男

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性的平均数，虽然都并未超出现代中国人女性的变异范围，但是均只落在女性变异范围的边缘区段，远离女性的平均数。因此，从柳江化石人髋骨的整体尺寸看，虽颇似女性，而与性别判断有关的重要指标则使它更可能属于男性。

表1 柳江化石人髋骨与中国人髋骨的比较（单位：毫米）

Comparison between hip bone from Liujiang and that of Chinese

项目	中国人男性 Chinese male		柳江 Liujiang	中国人女性 Chinese female	
	平均 Mean	变异范围 Range		平均 Mean	变异范围 Range
坐骨长Ⅰ (Length Ⅰ of ischium)	109.5	93-124	93	96.5	87-105
髋臼径 (Diameter of acetabulum)	55.3	46-64	47	49.6	45-55
坐骨大切迹最大宽	48.8	37-61	45*	56.8	45-68
Max. width of greater sciatic notch	50.89#	32.3-72.0#		60.9#	44.5-77.5#
坐骨大切迹深	36.3	30-44	35.2	33.6	27-40
Depth of greater sciatic notch	37.24#	24.0-47.5#		34.2#	21.5-48.5#
坐骨大切迹最大宽后段长	16.0	5-27	16.9	28.7	20-38
Posterior segment of sciatic notch width	19.28#	6.0-38.0#		30.39	12.0-44.0
坐骨大切迹指数	75.0	57.1-102.4	78.2	59.7	43.5-80.4
Index of sciatic notch					

注：1. 中国人的数据除带#号者外，均引自吴新智等（1982）。Data of modern Chinese are from Wu et al (1982) except those figures with #.

2. *校正后的数据 rectified figure.

3. #据孙尚辉等（1986）Cited from Sun et al (1986).

4. 按吴新智等（1982）坐骨长Ⅰ为髋臼上缘到坐骨结节的最大距离

According to Wu et al (1982) the length Ⅰ of ischium is defined as the maximum distance between the upper margin of acetabulum and ischial tuberosity

将柳江髋骨的数据放进吴新智等（1982）制作的“坐骨长Ⅰ（X）与OB（Y）的综合坐标面”可见柳江髋骨处于男性的范围内，虽然有些接近女性（图1）。

孙尚辉等（1986）曾用我国东北和南京出土的人骨研究髋骨的性别鉴定。根据坐骨大切迹的性别分析得出差别式：$Z_0=0.003794\angle A+0.005679\angle C$。其中∠A是以髂后下棘为顶的角，即后角；∠C是以坐骨大切迹最深点为顶的角，即上角。$Z_0>0.6376$者为女性，反之为男性，误判率为29.97%。柳江髂骨的测量显示：上角和后角都约为64°，Z=0.6093，判为男性。

以上用两种方法柳江髂骨都被判为男性，以下再从骶骨和头骨来探讨这个问题。柳江的头骨、骶骨和髋骨出自同洞，石化程度和颜色一致，同一洞中并未发现另外的头骨、髂骨和骶骨，骶骨和髂骨的骶髂关节面互相符合，因此这三骨应可认为属于同一个体。

作者曾利用歧异系数的计算将柳江头骨与日本琉球的港川出土的Ⅰ号头骨作比较（吴新智，1988；Wu，1992），计算得出的两者之间的歧异系数为0.029。歧异系数愈小表示两者间的差异程度愈小。港川还出土两个女性头骨（Ⅱ号和Ⅳ号），其间的歧异系数为0.033。作者同时还计算了山顶洞两具女性头骨（102号和103号）之间的歧异系数，得出0.030。可见柳江与上述两地点中各自的两个同性头骨之间的差异程度相仿佛。与港川Ⅰ号头骨伴出的还有基本上按正常解剖状态埋藏的相当完全的全身骨骼（Suzuki and Hanihara，

1982)，其性别判断应是可信的，至今未受到怀疑。因而柳江个体也应判为男性。

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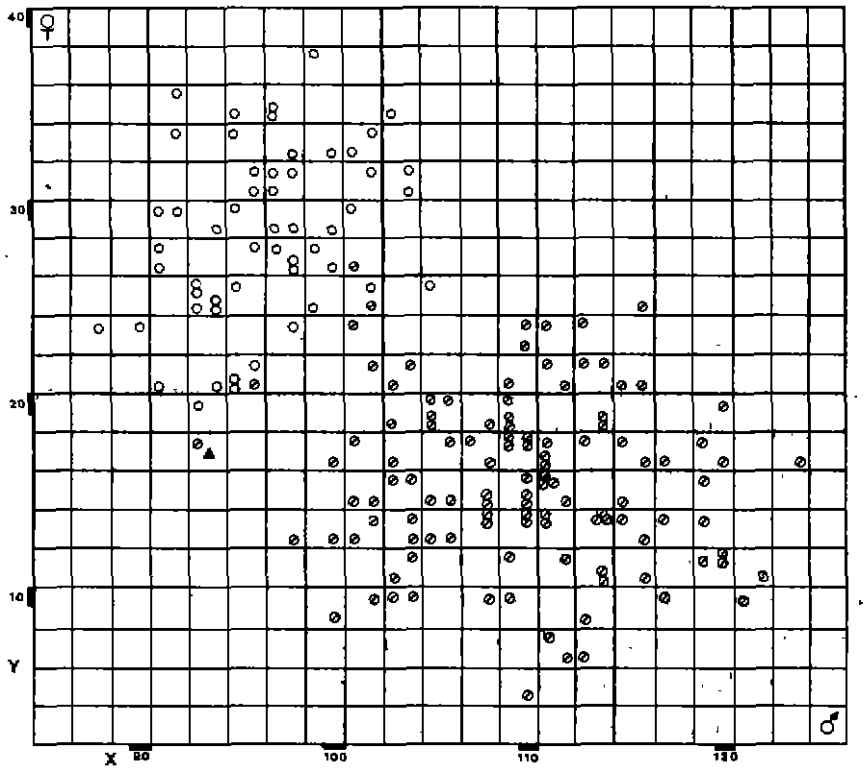

图1　坐骨长Ⅱ（X）与OB长（Y）的综合坐标图

Ischium Lengths 1 (X) poltted against OB (Y)

（△柳江 Liujiang，①男性 Male，○女性 Female）

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SEXING LIUJIANG FOSSIL INNOMINATE BONE

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Abstract

Although Wu Rukang had asserted all of the Upper Paleolithic human skeleton found from the small cave near Tongtianyan cave, Liujiang, Guangxi belonged to a male individual. But some other scholars gave different sexing diagnosis or felt doubt of Wu's assertion. The present paper provided evidence from several aspects for further discussing on this problem.

In addition to the loss of the anteno-inferior part the Liujiang innominate bone had been broken at the basal part of the ilium into upper and lower parts. These two parts had been slightly shifted from each other for about 1.5mm. The narrow fissure in between was filled up by the cave deposits which became calcified and cemented the two parts together. This shift and the filling up of the fissure made the width of sciatic notch about 1mm longer. These also made the distance between inferior posterior iliac spine and the deepest point of greater sciatic notch about 1mm shorter. The present author made some relevant measurements and retifications for necessary items on this bone.

Table 1 shows the comparison between hip bones of Liujiang paleolithic man and Han people of China. It shows the Liujiang hip bone is very small and corresponds to the smallest male Han hip bone in size. Its sciatic notch index is closer to the average of male Han than that of female, although it is near the lower limit in the range of female Han. The length of the distance between inferior posterior iliac spinne and the foot of the vertical from the deepest point of greater sciatic notch to the maximum width of this notch (i. e OB length in Wu et al 1982 or the posterior segment of the maximum width of greater sciatic notch in Sun and Ou 1986) is very close to that of male Han. So the Liujiang hip bone is close to the average of female specimens in size but according to the parameters especially responsible to sexing it is more probable to belong to a male individual.

The present author put relevant figures of Liujiang specimen into a chart cited from Wu et al (1982) for sexing the hip bone by length I of ischium and OB length (or posterior segment of the maximum width of greater sciatic notch). The result indicates that Liujiang specimen is within the range of male, although not far from that of female.

Sun Shanghui and Ou Yongzhang had made an equation for sexing hip bones on the basis of two angles among the measurements of greater sciatic notch of human bones unearthed from Nanjing and Northeastern part of China (Sun and Ou 1986). They draw a triangle formed by three points: A (tip of inferior posterior iliac spine), B (ischial spine) and C (deepest point of the greater sciatic notch). According to their paper the equation is: $Z_0=0.003794\angle A+0.005679\angle C$, $Z_0=0.6376$ is the demarcation point. Most of hip bones with Z value smaller than this are belonging to male. In Liujiang specimen $\angle A$ is around 64°; $\angle C$ is around 64°, $Z=0.6093$, indicating belonging to a male individual.

In addition to sexing on the basis of measurements of hip bone itself, the present author also investigates the evidence from the sacrum and skull from the same cave.

As Wu Rukang has indicated the sacro-iliac articular surface of Liujiang hip corresponds to not only upper two sacral vertebrae but also to the third sacral vertebra (Woo, 1959). This is characteristic of male sex.

The present author has made comparisons among skulls from Liujiang and Minatogawa as well as Upper Cave. The coefficient of divergence (CV) between Liujiang and Minatogawa No. 1 is 0.029. The CV between two Minatogawa female skulls (Nos. 2 and 4) is 0.033; that between two female skulls of Upper Cave (Nos. 102 and 103) is 0.030. So the divergence between Liujiang and Minatogawa No. 1 is so small that it corresponds to the divergence between two female individuals from each of these two sites. The Minatogawa skull No. 1 was associated with nearly complete skeleton buried in an almost anatomically normal state (Suzuki and Hanihara 1982), so the sexing of this individual is highly confident. Therefore Liujiang skull and hip bone should belong to male as well.

Key words Innominate, Sexing, Liujiang, Upper Paleolithic