Sperm morphology reflects reproductive health and stress at testicular level. However, the lack of standardized morphometrics methods doesn’t allow reach consensus on the classification of defined cell types. Thus, the relation shape-size and how this influences the quality of sperm cells requires new morphometrics analysis. The aim of this study was the analysis of the cephalic patterns N, A, R and P in normozoospermic subjects classified according to WHO (2010) using SEM micrographs by means of Geometric Morphometrics (GM) methods. For each cell a set of landmarks which defined the cephalic region, acrosome and postacrosomal region was selected and processed by a Generalized Procrustes Analysis (GPA). The morphometric cell variation was calculated using multivariate statistical techniques. Our findings show that the Principal Components (PC1-2) account 67.8% of total variance and record differences between cell types, being A, P and R more variables in shape than N. Secondly, Canonical Variates Analysis (CV1-2 86.5%) showed that 90% of cells are classified as normal (cross validation). Nevertheless, the 60% of abnormal cells had normal conformation and other cell types (P and R) were under % of correct classification. Our morphometric approach is according with previous studies that have shown a clinical correlation between extreme shape cells and their fertilizing capacity. Sperm type A represents borderline forms between P and R. Other stress factors (physiological, mental and environmental) could be the cause of these forms. The GM methods permit record small variations in sperm cell shape and functional abilities from a new morphometric perspective.