The African Pigmy mouse is a fascinating species in which females can have three different sex chromosome complements (XX, XX* and X*Y) due to the existence of a feminizing X* chromosome. In this manuscript, the authors report big differences in the maternal behaviors of X*Y females compared to those with XX and XX*. This is an interesting finding with future implications for the mechanisms that shape parental care and also for analyses of the fitness and evolutionary history, as well as the physiological and behavioral implications of this unique feminizing X* chromosome.
The manuscript is generally easy to read, with clear figures. My main concerns are with the lack of sufficient detail in the methods and some of the conclusions.

Please provide much more detail in the methods. Here is a partial, but not exhaustive list:

1. How many generations were the mice bred in the lab after being caught in the wild?
2. Many more details on the husbandry of the animals is necessary. For example: what do you feed them and how often, in what cages and what dimensions are they kept, is the room temperature controlled and what temperature, light cycle conditions, etc.
3. Are X*Y sisters and littermated of XX*? Otherwise, there is a chance that differences in behavior between the genotypes are related to other genetic differences between X*Y and XX* (and XX) due to population structure (in the wild or in the lab) rather than to the genotype of the sex chromosomes themselves. Please describe how the individuals used in the experiments were generated.
4. Lines 119-120: How many pups are placed in the cage for tests of pup retrieval? And how was this normalized across females with litters of different sizes?
5. The dimensions of the cages are not clear. Which one is the height?
6. Line 136: More details on the nestlet. What exactly is this compressed cellulose? What brand? What dimensions and weight?
7. Line 140-141: I don't understand "If a nest was built without using cellulose". What else could it have been built with if you only provided cellulose as nesting material?
8. The parental care strategy measurement is not clear due to insufficient details. For example, was this done in the home cage or a new cage? How long is each observation? Do you average all observations? Was the male ever separated from the female and added back for this assay or is this just observations in the cage where the female and male reproduced, without disturbing it. Also, regarding the assay and its interpretation, this measurement reflects the behavior of the male as much as that of the female. Are you confident you are measuring the "strategy" of the female rather than the interest of the male in the pups because random males are placed with females of all three genotypes?

Other comments

9. Lines 156-157 and 401: I didn't understand why you cannot inject viruses into the brains of these mice nor euthanize mothers to perform analyses of their brains or other experiments.
10. Lines 10-11: I think the authors mean that the sexually dimorphic nature of parental care is largely explained by differences in gonadal hormones between the sexes, but this is not clear.

11. Lines 23-24 and 336-337: I'm not sure why the unique maternal care behavior of X*Y females is being labeled as a "third sexual phenotype". What is a "sexual phenotype"? And wouldn't the results of the authors actually be consistent with maternal behavior in these mice not being a "sexual phenotype" since all three of XX, XX* and XY* are females (gonadally and in terms of reproductive anatomy) so their (gonadal) sex doesn't differ, only their behavior?
12. Lines 30-31: Missing a comma after females. Also, "invest more notably as a primary result of an obligatory lactation" is not clear. A physiological result? An evolutionary consequence? There are mammals such as marmosets in which most of the parental care (except for lactation) is performed by males. Also, in birds, females often do more parental care than males, even though there's no lactation. Thus, higher maternal than paternal care is related to higher investment by females than males in offspring (including in making eggs and in preganancy), not necessarily a consequence of lactation itself.
13. References such as Rice, 1984 are missing from the reference list.
14. Lines 75-78: I'm not convinced about calling high aggression, reduced anxiety and greater bite force as "male-specific behaviors". I wouldn't, for example, call elevated height as a male-specific human trait, even though on average human males are taller than females. Please consider rephrasing.
15. Lines 78-79: I don't think there's enough evidence to say that the Y chromosome masculinizes neural circuits in X*Y *M. minutoides*. It could be a lack of a second X chromosome or X* masculinizing them when there is a Y chromosome (i.e. an epistatic effect).
16. Line 245: "on average" instead of "in average".
17. Lines 278-279 and 384-385: Because you did not directly compare the neuroanatomy of AVPV between *M. minutoides* and *M. musculus*, the conclusion that "there were no differences in the neuronatomy of the AVPV in comparison to *M. musculus*" is a bit of a stretch. Please rephrase.
18. Lines 302-303: No direct comparison of aggressiveness was done between pre and post parturition, so this conclusion is not warranted.
19. Lines 323-327: I don't understand this very long and convoluted sentence. Also, there is no evidence from this study that "masculinization" of X*Y females is caused by Sry. See comment 15.
20. Lines 329-332: Related to point 14 above, how is this evidence of masculinization or of a "hyperfeminine" trait? I would consider rephrasing these sections.
21. Lines 347-350: Related to point 15, this could also be due to epistasis between X* and Y?
22. Line 397: What is a species with "precious" status?