PRECOCIOUS UDDER IN A DOE – Case Report
Introduction

• Puberty: beginning of the reproductive life of an animal
• First estrus in females
• Spermatozoids in ejaculate in males
• Age at puberty varies greatly among and within species
• Endocrine system central in initiation of puberty
• Variability among individuals multifactorial: Breed, season, nutrition, genetics
• Effect of hormones and secondary factors lead to changes in an animal
Introduction cntd

• Puberty in doelings: when 30-50% of adult body weight
• Average: 5-10 months of age (Riera 1982).
• Toggenburgs: 7-10 months & 4-8 months in females & males respectively
Case

• This case was reported from an intensive dairy goat farm in Kiambu County-Kenya
• A 10 month old doe was reported to have an enlarged udder
• It was alleged that she had not been bred
• A clinical examination revealed;
  ➢ A good body condition, good environment, bright and alert demeanor, evenly enlarged udder and normal vital parameters
Enlarged udder
Differentials

- Pregnancy
- Witch’s milk
- Mastitis
- Precocious udder
Ultrasonography

• Ultrasonography was done using a trans-rectal probe [linear array probe] with a B mode at a frequency of 7.5 MHz.
• No cardinal sign of pregnancy was observed.
Diagnosis

• From the findings above it was concluded that she was not pregnant.
• The condition was concluded to be **precocious udder**.
• It was recommended that she be watched closely for any sign;
  ➢ of pain,
  ➢ uneven udder size,
  ➢ abnormal swelling,
  ➢ warm udder
  ➢ estrus.
• Precocity is a case where the animal attains puberty much earlier than the average breed period (Teles et al., 2008).

• It has been reported in all studied animals including humans (Luan et al., 2007; Chu et al., 2009).

• Precocious udder is the development of the udder without pregnancy (Whitacre et al., 1988; Palmer et al., 2005; Divakar et al., 2008).

• Several causes have been reported including:
  - Neoplasia of the ovary, Zearalenone toxicity, persistent CL in older goats, idiopathic
Discussion cntd

• Different outcomes reported
• Spontaneous regression of the enlarged udder in a heifer after removal of the granulosa cell tumor followed by normal cyclicity
• Normal pregnancy in an idiopathic case
Discussion cntd

• Puberty primarily controlled by hormones regulated by the HPG axis
• KiSS1 gene has been reported as a major regulator of the HPA
• Kiss1 gene codes for neuropeptides that facilitate its functions
• Kisspeptins (neuropeptide) act as ligands for the G-protein- coupled receptor 54 (GPR54) (Gottsch et al., 2006; Navarro et al., 2012)
• Kisspeptin proteins stimulate the GnRH-dependent LH and FSH secretion in mammals through GPR54 (Tena-Sempere 2006)

• These findings may explain the idiopathic development of the udder in does without pregnancy in the prepubertal period.

• Under normal circumstances, a doe will have a developed udder about 1 month before the first kidding.

• This indicates an area for genetic exploration for maximum utilization of valuable genes in our livestock.
Discission cntd

• Udder precocity has been interpreted as a sign of good milkers
• It has been mostly reported in daughters of high milkers
• The assumption that does with precocious udder will be good milkers
  indicates a reseachable area
Conclusion

• Precocious udder occurs in does
• The KiSS-1 gene and the GPR54 system plays a major role in the occurrence of precocity
• The mutation of Kisspeptin proteins influences the phenotypic precocious puberty in animals whose effects on the productivity of the animal is a researchable area
• Precocious udder development has multiple etiologies which include genetic makeup
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