Veroneseans over arbitrary fields

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Veroneseans over finite fields are well studied objects. The basic characterizations of quadric and Hermitian Veroneseans are inspired by the real and complex situation. The proofs in the finite case do not use too many counting arguments, but still, in crucial steps there is no direct way around them. In this talk we generalize some of these characterizations to quadric and Hermitian Veroneseans over arbitrary fields by rewriting the proofs in an entirely geometric way. We also discuss other generalizations, including phenomena that do not occur in the finite case, but which make the theory richer.